

TRANSPORTATION

PURPOSE AND TRANSPORTATION ANALYSIS ZONES

The purpose of this Transportation Plan is to provide guidance to the City of Jordan to prepare for transportation needs associated with future growth and development. This plan provides a framework for future decisions regarding infrastructure improvements necessary to achieve safety, access, mobility, and performance standards for the existing and future transportation system. The framework is presented through proposed local policies, standards, and guidelines to implement the future multimodal transportation network vision, which will be established upon acceptance of the Comprehensive Plan. Prior to acceptance, the Comprehensive Plan will be coordinated with respect to county, regional, and state plans in such a way that the transportation system enhances quality economic and residential development within the City of Jordan.

To accomplish these objectives, this Transportation Chapter of the Comprehensive Plan provides information about:

- The functional hierarchy of streets and roads related to access and capacity requirements
- Existing and potential deficiencies of the arterial-collector street system
- Potential alternatives to enhance the arterial-collector street system capable of accommodating traffic volumes to 2040 and beyond, categorized in funded and planned scenarios
- Access management policies and intersection controls
- Existing trail and sidewalk facilities, and associated potential improvements
- Freight, aviation, and transit network information and plans

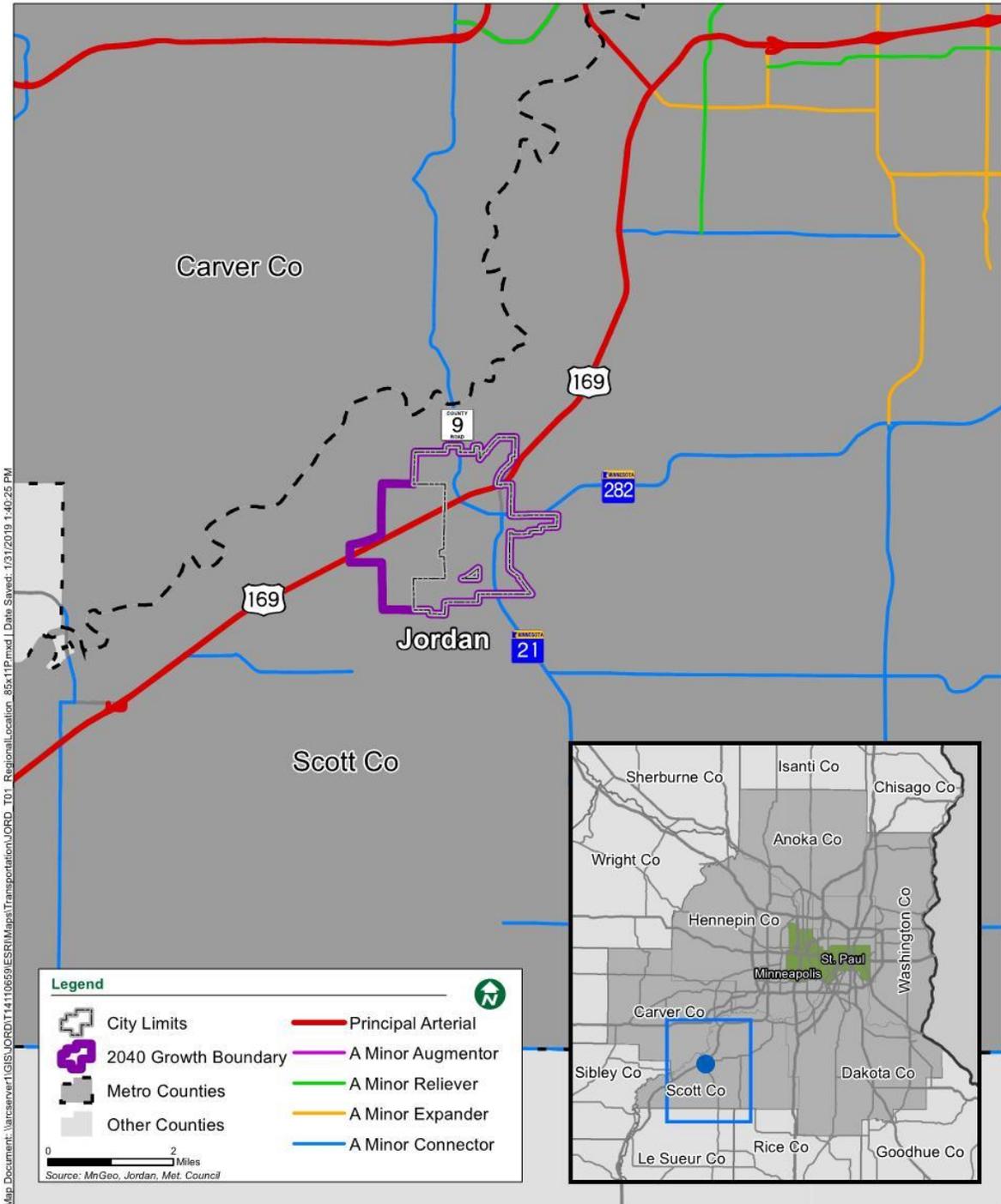
Jordan's location with respect to regional transportation routes is illustrated in **Map 3-1**.

MAP 3-1: REGIONAL LOCATION MAP



2040 Comprehensive Plan
City of Jordan, Minnesota

Regional Location Map
January 2019



ROADWAYS

The standards included in this plan create the foundation for developing the transportation system, evaluating its effectiveness, determining future system needs, and implementing strategies to fulfill the goals and objectives identified.

I. FUNCTIONAL CLASS

The functional classification system is a roadway network that distributes traffic from neighborhood streets to collector roadways, then to minor arterials, and ultimately the Metropolitan Highway System. Roads are placed into categories based on the degree to which they provide access to adjacent land uses and lower level roadways versus providing higher-speed mobility for “through” traffic. Functional classification is a cornerstone of transportation planning. Within this approach, roads are located and designed to perform their designated function. Functional classification involves determining what functions each roadway should perform prior to determining its technical design features, such as street widths, speed, and intersection control. Access spacing standards and guidelines can be found in the MnDOT Access Management Manual (January 2008) and Scott County Comprehensive Plan.

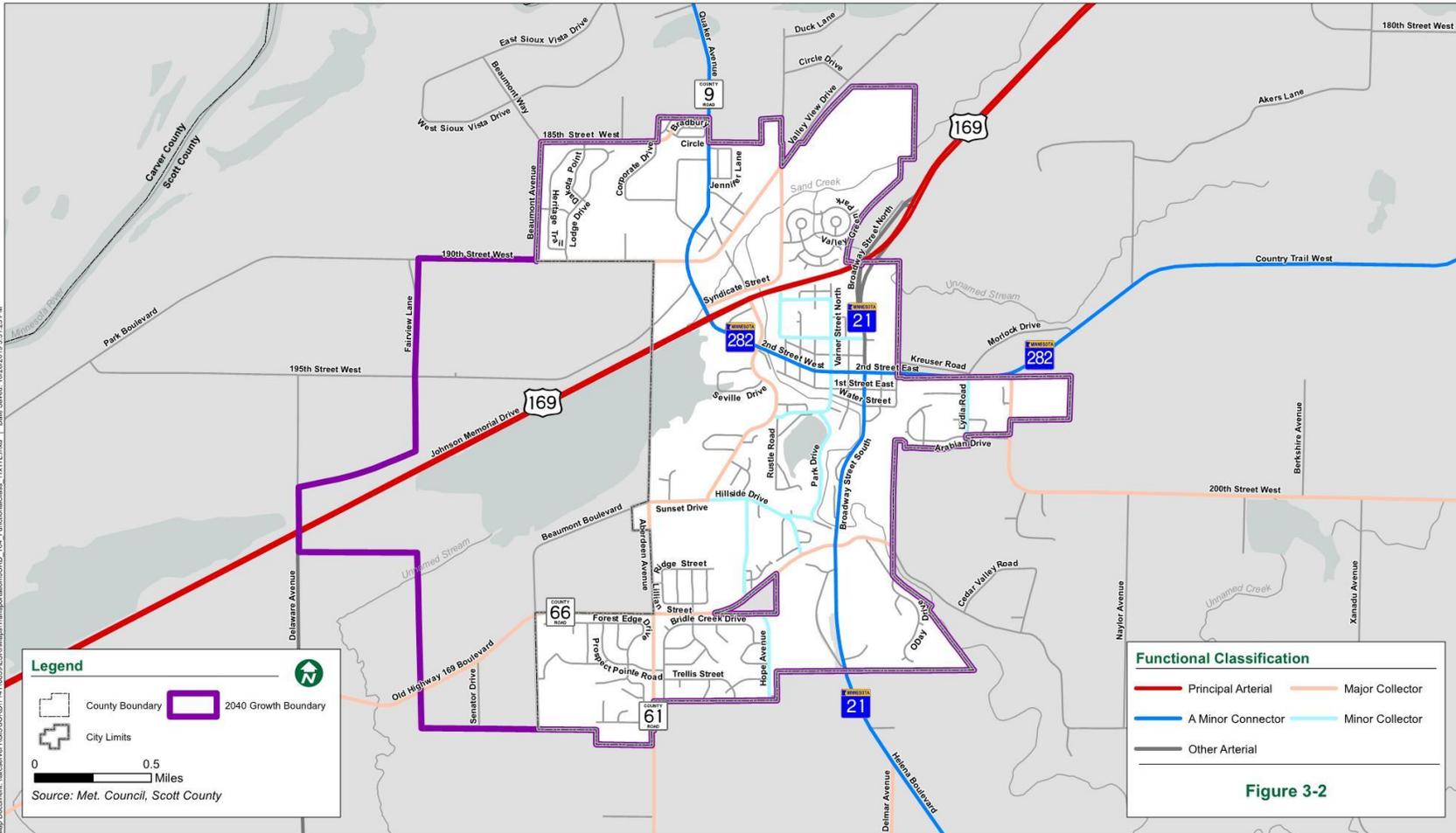
The functional classification system typically consists of five major classes of roadways: Principal Arterials, Minor Arterials, Major Collectors, Minor Collectors, and Local Streets. The current roadway functional classification as identified by the Metropolitan Council for Jordan are described in the following section and illustrated in **Map 3-2**.

MAP 3-2: EXISTING FUNCTIONAL CLASS



2040 Comprehensive Plan
Jordan, Minnesota

Existing Roadway Functional Class
October 2019



Principal Arterials

Principal arterials are the highest roadway classification and make up the Metropolitan Highway System. The primary function of these roadways is to provide mobility for regional trips, and they do not provide a land access function. They are intended to interconnect regional business concentrations in the metropolitan area, including the central business districts of Minneapolis and St. Paul. These roads also connect the Twin Cities with important locations outside the metropolitan area. Principal arterials are generally constructed as limited access freeways but may also be multiple-lane divided highways. They typically connect only with other Principal Arterials (including interstate freeways) and select Minor Arterials and Collector streets. Principal Arterials are responsible for accommodating through trips, as well as trips beginning or ending outside of the Jordan area.

US Highway 169 is the only existing Principal Arterial in the Jordan area. County Highway (CH) 8 has been identified as a future Principal Arterial once improved and connected from Highway 169 to I-35.

Minor Arterials

These roads connect important locations within the City of Jordan with access points of the metropolitan highway system and with important locations outside the city. These arterials are also intended to carry short to medium trips that would otherwise use principal arterials. While "A" Minor arterial roadways provide more access than principal arterials, their primary function is still to provide mobility rather than access to lower level roadways or adjacent land uses.

Metropolitan Council has defined four sub-categories of "A" Minor arterials: reliever, expander, connector, and augmentor. These sub-categories are primarily used by the Metropolitan Council to allocate federal funding for roadway improvements. The different types do not have separate, specific design characteristics or requirements. However, they have somewhat different functions in the roadway network, and are typically found in certain areas within the region.

- **Relievers** provide supplementary capacity for congested parallel principal arterials. They are typically found in urban and suburban communities.
- **Augmentors** supplement the principal arterial system in more densely developed or redeveloping areas. They are typically found in urban communities.
- **Expanders** supplement the principal arterial system in less densely developed or redeveloping areas. They are typically found in urban and suburban communities.
- **Connectors** provide safe, direct connections between rural centers and to principal arterials in rural area without adding continuous general-purpose lane capacity. They are typically found in rural communities.

Roadways of this classification typically link urban areas and rural Principal Arterials to larger cities and other major traffic generators capable of attracting trips over similarly long distances. Minor Arterials service medium length trips, and their emphasis is on mobility as opposed to access in urban areas. Minor Arterials connect with Principal Arterials, other Minor Arterials, and Collector streets. To promote mobility consistent with their function, Minor Arterial connections to Local streets should be avoided if possible and private access should not be allowed. Minor Arterial roadways are typically spaced approximately 1-2 miles apart in developing communities similar to Jordan.

The A-Minor Arterials in the Jordan area are described briefly below.

North/South Routes

1. CSAH 9, an A Minor Connector, extends to the northwest out of Jordan, beginning at TH 169 and extending to the Minnesota River where it crosses into Carver County and becomes Carver County CSAH 45. This roadway connects with US Highway 212 west of the City of Chaska and north of the City of Carver by means of Carver County's CSAH 40 to County Road (CR) 147.
2. TH 21 provides connectivity in Scott County between Jordan and New Prague. South of Scott County, TH 21 extends to the City of Faribault where it terminates at TH 60. Vehicles traveling this route can access Interstate 35 in Faribault.

East/West Routes

1. TH 282, an A Minor Connector, begins at TH 169 and terminates at Highway 13 south of Prior Lake.
2. CSAH 8, an A Minor Connector, is located south of the City of Jordan and east of TH 21. This route, together with CR 76, future completion of a 3.5 mile missing roadway segment between TH 21 and CSAH 59, and future completion of a ¼ mile segment between CR 76 and CSAH 5 in Belle Plaine, would provide connectivity across central Scott County between TH 169 and I-35. At present, there are no specific plans to construct any part of the extension. If these improvements constructed, the functional classification of CSAH 8 will be elevated. CSAH 8 is therefore planned as a future Principal Arterial.

Major & Minor Collectors

Collector roadways provide a balance of the mobility and land-use access functions discussed above. They generally serve trips that are entirely within the city and connect neighborhoods and smaller commercial areas to the arterial network. Minor collectors generally are shorter in length, with lower volumes and lower speeds than Major Collectors. Collector streets are predominantly responsible for providing circulation within a city and are typically spaced approximately ½ to 1 mile apart in urbanizing areas.

CSAH 10, 11, and 66 are county roads classified as Major Collector roadways in the Jordan area. Other city streets, such as Sunset Drive/Creek Lane from the Schools Campus to TH 282 currently function as Major Collector roadways. Sunset Drive east of Creek Lane to TH 282 is a good example of an existing street serving as a Minor Collector roadway in Jordan. County Roads 61 and 64 are also designated as Minor Collectors.

Local Streets

Roadways of this classification typically include city streets and rural township roadways, which facilitate the collection of local traffic and convey it to collectors and Minor Arterials. Their function is to provide direct property access.

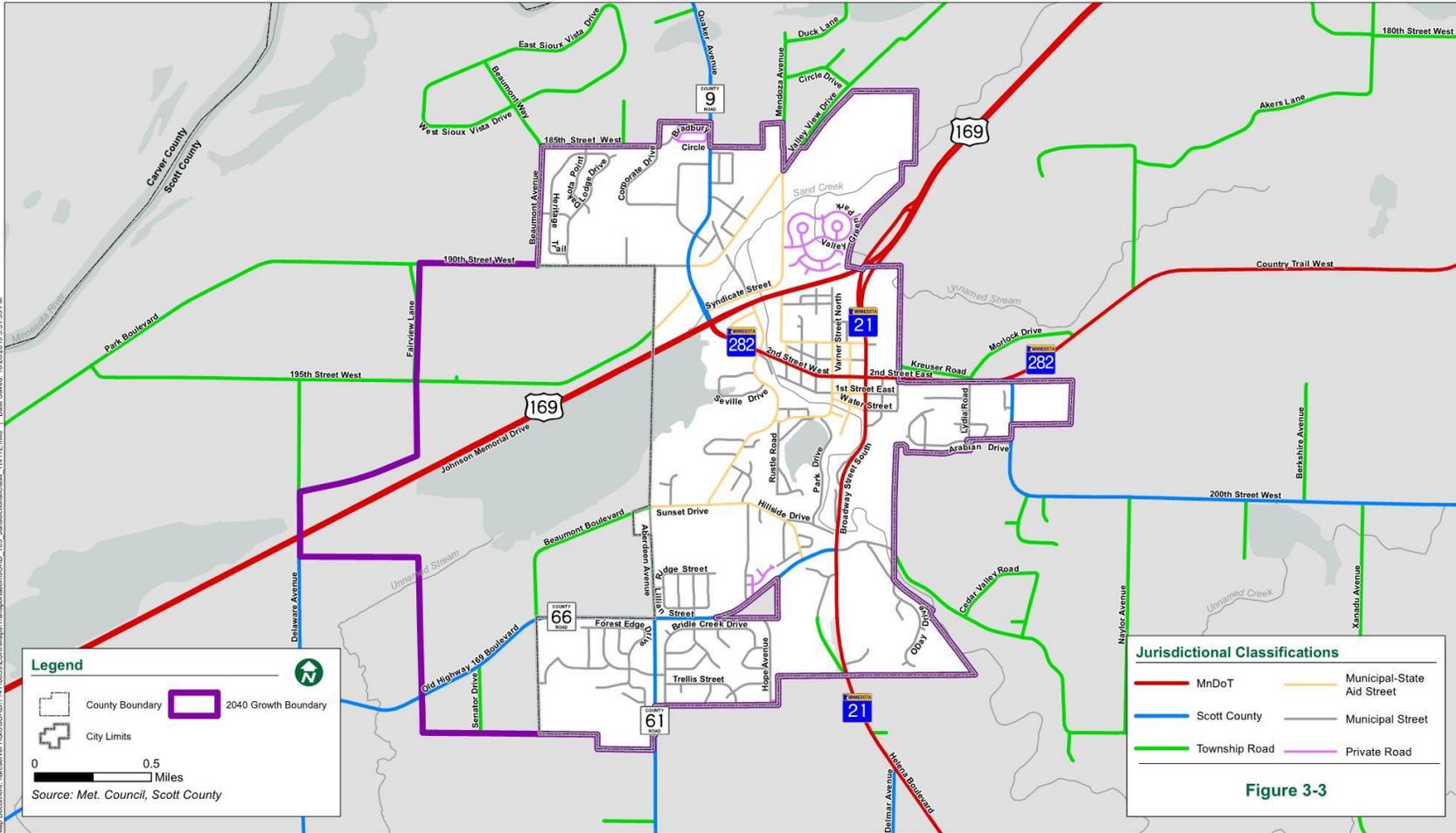
II. JURISDICTIONAL CLASS

Roadway jurisdiction directly relates to functional classification of roadways. Generally, roadways with higher mobility functions (such as arterials) should fall under the jurisdiction of a higher level of government. In recognizing these roadways serve greater areas resulting in longer trips and higher volumes, jurisdiction of Principal Arterial and Minor Arterial roadways should fall under the jurisdiction of the state and county, respectively. Similarly, roadways with more emphasis on local circulation and access (such as collectors) should fall under the jurisdiction of the local government unit. These roadways serve more localized areas and result in shorter trip lengths and lower volumes. Some Major Collector and all Minor Collector roadways should fall under the jurisdiction of the City of Jordan. As roadway segments are considered for turn-back to the City, efforts will be taken to evaluate the roadway features for conformance to current standards, structural integrity, and safety. This effort will help the City develop short and long-range programs to assume the responsibilities of jurisdictional authority.

In and around the City of Jordan, several jurisdictions have responsibility for the overall road network. MnDOT is responsible for US Highway 169, TH 21, and TH 282. Scott County is responsible for County State Aid Highways (CSAH) 9, 57, 59, 61, and 66. The City of Jordan or the surrounding townships are responsible for all remaining roadways, depending on their location.

Map 3-3 depicts the existing roadway jurisdictional classification system in Jordan.

MAP 3-3: EXISTING ROADWAY JURISDICTION



III. ROADWAY CAPACITY

Roads are designed to handle a defined level of traffic volume, with the intended traffic volume selected based on the roadway functional classification. Once the roadway corridor begins to approach or exceed capacity, traffic movements become more difficult and there may be congestion, leading to safety concerns and statistical safety issues. Capacity increases - the addition of new travel lanes, new roads, intersection or interchange redesign, or other capacity increasing improvements - become demanded in the transportation system when congestion and safety issues are present.

A planning-level traffic capacity analysis was performed by Scott County to identify roadway segments where capacity problems are anticipated to occur by 2040. Based on the projected 2040 traffic volumes and the assumed 2040 roadway network, an analysis of anticipated future congestion conditions was performed. This analysis used the volume-to-capacity method. The volumes were taken from the 2040 projections discussed under the previous heading. The capacity is based on typical capacity levels for different non-freeway types and configurations of roadways as summarized in **Table 3-1**.

**TABLE 3-1
TYPICAL TRAFFIC CAPACITY BY ROADWAY TYPE/CONFIGURATION**

Roadway Design	Planning Level Daily Capacity
Gravel Roadway	Up to 500
Minor Collector Street	Up to 1,000
Urban 2-Lane	7,500 – 12,000
Urban 3-Lane or 2-Lane Divided	12,000 – 18,000
Urban 4-Lane Undivided	Up to 20,000
Urban 4-Lane Divided	28,000 to 40,000
4-Lane Freeway	Up to 70,000
Gravel Roadway	Up to 500
Minor Collector Street	Up to 1,000

Capacities of roadway systems vary based on the roadway's functional classification. From the Metropolitan Council Local Planning Handbook, roadway capacity per lane for divided arterials is 700 to 1,000 vehicles per hour and 600 to 900 vehicles per hour for undivided arterials. These values tend to be 10% of the daily physical roadway capacity.

Principal and Minor Arterials

Based on the capacities noted above, a two-lane arterial roadway has a daily capacity of 12,000 to 18,000 vehicles per day, a four-lane divided arterial street has a daily capacity of 28,000 to 40,000 vehicles per day, and a four-lane freeway has a daily capacity of approximately 70,000 vehicles per day. The variability in capacities are directly related to many roadway characteristics including access spacing, traffic control, adjacent land uses, as well as traffic flow characteristics, such as percentage of trucks and number of turning vehicles. Therefore, it is important that the peak hour conditions are reviewed to determine the actual level of volume-to-capacity on roadway segments with average daily traffic volumes approaching these capacity values.

Major Collectors and Minor Collector Streets

Major Collector and Minor Collector streets have physical capacities similar to those of a two-lane arterial street; however, the acceptable level of traffic on a residential street is typically significantly less than the street's physical capacity. The acceptable level of traffic volumes on Major Collector and Minor Collector streets vary based on housing densities and setbacks, locations of parks and schools, and overall resident perceptions. Typically, traffic levels on Major Collector streets in residential/educational areas are acceptable when they are at or below 50% of the roadway's physical capacity, resulting in an acceptable capacity of 6,000 to 9,000 vehicles per day. Acceptable traffic levels on Minor Collector streets are considerably less. Typically, a daily traffic volume of 1,000 to 1,500 vehicles per day is acceptable on Minor Collector streets in residential areas.

The capacity of a gravel road is physically greater than 500 vehicles per day, but based on studies conducted by Minnesota counties, it has been determined that an average daily traffic volume (ADT) over 500 justifies paving the roadway. This is justified due to the maintenance costs of keeping a gravel road in working condition when ADT is over 500, and balancing this against the pavement costs, pavement life, and maintenance costs of a paved roadway with the same volumes.

The capacity of a transportation facility reflects its ability to accommodate a moving stream of people or vehicles. It is a measure of the supply side of transportation facilities. Level of Service (LOS) is a measure of the quality of flow. The concept of LOS uses qualitative measures that characterize operation conditions with a traffic stream and their perception by motorists. Six LOS are defined for roadways. They are LOS A, B, C, D, E, and F. LOS A represents the best operating conditions and LOS F represents the worst. The LOS of a multilane roadway can be dictated by its volume-to-capacity (v/c) ratio. The LOS of a two-lane roadway is defined in terms of both percent time-spent-following and average travel speed. LOS F is determined when the v/c ratio is over 1.00. The criteria for LOS and general v/c ratio for multilane highways and speed for two-lane highways are provided in **Table 3-2**.

**TABLE 3-2
HIGHWAY LEVEL OF SERVICE**

Level of Service	Multilane v/c Ratio	Two-Lane Average Travel Speed (mph)
A	<0.28	>55
B	>0.28 – 0.45	>50-55
C	>0.45 – 0.65	>45-50
D	>0.65 – 0.86	>40-45
E	>0.86 – 1.00	≤40
F	> 1.00	v/c >1.00

For roadways in urban sections, the urban street class and average travel speed determine the LOS. This is generally similar to the LOS for two-lane highways but takes into account the free flow speed of the facility (average speed achieved with no other vehicles present on roadway) and the addition of traffic control. This criterion is established in **Table 3-3**.

**TABLE 3-3
URBAN STREET LEVEL OF SERVICE**

Range of Free-Flow Speed (LOS)	Average Travel Speed (mph)			
	55 to 45	45 to 35	35 to 30	35 to 25
A	>42	>35	>30	>25
B	>34-42	>28-35	>24-30	>19-25
C	>27-34	>22-28	>18-24	>13-19
D	>21-27	>17-22	>14-18	>9-13
E	>16-21	>13-17	>10-14	>7-9
F	≤16	≤13	≤10	≤7

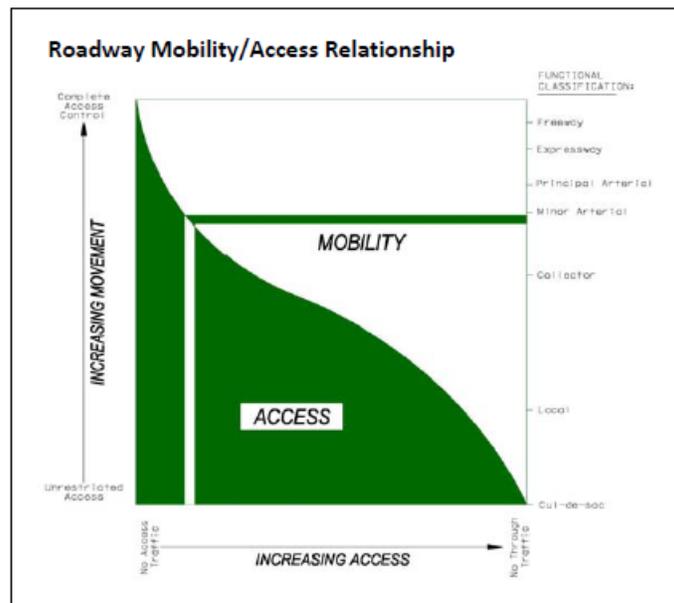
Generally, the City of Jordan should consider capacity improvements on roadways with a LOS D or worse and volume-to-capacity ratios over 0.75 during the peak hours.

IV. ACCESS MANAGEMENT GUIDELINES

Access management guidelines are developed to maintain traffic flow on the network so each roadway can provide its functional duties, while providing adequate access for private properties to the transportation network. This harmonization of access and mobility is the keystone to effective access management.

Mobility, as defined for this Transportation Plan, is the ability to move people, goods, and services via a transportation system component from one place to another. The degree of mobility depends on a number of factors, including the ability of the roadway system to perform its functional duty, the capacity of the roadway, and the operational level of service on the roadway system.

Access, as applied to the roadway system in Jordan, is the relationship between local land use and the transportation system. There is an inverse relationship between the amount of access provided and the ability to move through-traffic on a roadway. As higher levels of access are provided, the ability to move traffic is reduced. The graphic below illustrates the relationship between access and mobility.



Each access location (i.e. driveway and/or intersection) creates a potential point of conflict between vehicles moving through an area and vehicles entering and exiting the roadway. These conflicts can result from the slowing effects of merging and weaving that takes place as vehicles accelerate from a stop turning onto the roadway, or deceleration to make a turn to leave the roadway. At signalized intersections, the potential for conflicts between vehicles is increased, because through-vehicles are required to stop at the signals. If the amount of traffic moving through an area on the roadway is high and/or the speed of traffic on the roadway is high, the number and nature of vehicle conflicts are also increased.

Accordingly, the safe speed of a road, the ability to move traffic on that road, and safe access to cross streets and properties adjacent to the roadway all diminish as the number of access points increase along a specific segment of roadway. Because of these effects, there must be a balance between the level of access provided and the desired function of the roadway.

In Jordan, access standards and spacing guidelines are recommended as a strategy to effectively manage existing ingress/egress onto City streets and to provide access controls for new development and redevelopment. The proposed access standards (driveway dimensions) are based on Minnesota Department of Transportation (MnDOT) State-Aid design standards. It should be noted that the City of Jordan has access authority for those roadways under their jurisdiction. Likewise, Scott County and MnDOT have access authority for roadways under their jurisdiction. The access spacing guidelines for Jordan are consistent with current practices of other cities, as well as with Scott County and MnDOT. The hierarchy of the functional classification system should be maintained when applying the access spacing guidelines to the roadway network (i.e. a collector street should have priority access to a Minor Arterial roadway over a Local street or adjacent property). **Tables 3-4 and 3-5** present the access standards and access spacing for the Jordan roadway network. Please refer to Scott County's minimum access spacing guidelines identified in their current Transportation Plan.

**TABLE 3-4
ROADWAY ACCESS STANDARDS**

Driveway Dimensions	Residential	Commercial or Industrial
Driveway Access Width	11'-22' (16' desired)	16'-32' (32' desired)
Minimum Distance Between Driveways	20'	20'
Minimum Corner Clearance from a Collector Street	60'	80' ⁽¹⁾

¹At the discretion of the City Engineer, 80' minimum

**TABLE 3-5
ACCESS SPACING GUIDELINES FOR COLLECTOR ROADWAYS¹**

Type of Access by Land Use Type	Major Collector	Minor Collector
Low and Medium Density Residential		
Private Access	Not Permitted ⁽²⁾	As Needed ⁽³⁾
Minimum Corner Clearance from a Collector Street	660'	300'
Commercial, Industrial or High Density Residential		
Private Access		
Minimum Corner Clearance from a Collector Street	660'	660'

¹ These guidelines apply to City streets only. Scott County and MnDOT have access authority for roadways under their jurisdiction. Please refer to Scott County's minimum access spacing guidelines identified in their current Transportation Plan.

² Access to Major Collectors is limited to public street access. Steps should be taken to redirect private accesses on Major Collectors to other local streets. New private access to Major Collectors is not permitted unless deemed necessary.

³ Private access to Minor Collectors is to be evaluated by other factors. Whenever possible, residential access should be directed to non-continuous streets rather than Minor Collector roadways. Commercial/Industrial properties are encouraged to provide common accesses with adjacent properties when access is located on the Minor Collector system. Cross-traffic between adjacent compatible properties is to be accommodated when feasible. A minimum spacing between accesses of 660' in commercial, industrial, or high density residential areas is encouraged for the development of turn lanes and driver decision reaction areas.

V. GEOMETRIC DESIGN STANDARDS

Geometric design standards are directly related to a roadway's functional classification and the amount of traffic that the roadway is designed to carry. For the City of Jordan, geometric design standards are based on MnDOT State-Aid standards, except as modified herein.

**TABLE 3-6
CITY OF JORDAN ROADWAY GRADE DESIGN STANDARDS**

Type of Road	Right of Way Width	Maximum Grade
Local Street	50-60 feet	7%
Collector Street	660-80 feet	4%
Arterial Road	150 feet	0.5%
Freeway	300 feet	0.5%

The Geometric Design Standards illustrated in Figures T-13 through T-15 in Appendix C were developed to achieve adequate capacity within the roadway network, as well as a level of acceptance by adjacent land uses. Each component identified in the typical sections is essential to a particular roadway's ability to perform its function in the roadway network.

County and State Roadways

In addition to these standards for City Collector roadways, the State and County arterial and collector roadways shall include components of the City's transportation system. For each of the County highways and Trunk Highways 21 and 282 within Jordan, a 10' bituminous trail is

recommended on at least one side of the roadway to accommodate pedestrian, bicycle, and other non-motorized travel. Where achievable, it is recommended non-motorized pedestrian facilities be provided along both sides of collector and arterial roadways to minimize crossings of such roadways at unsafe locations.

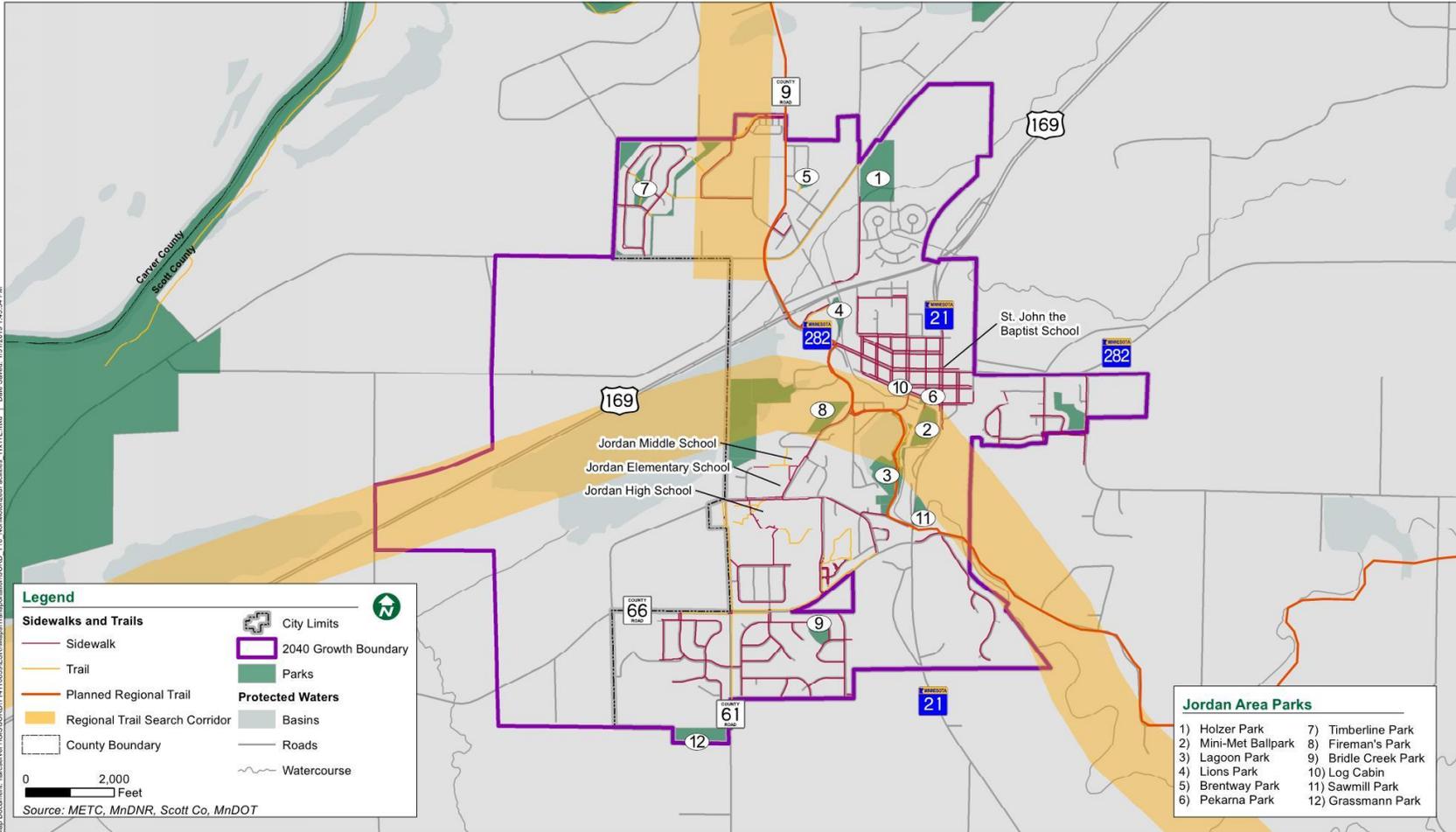
Roadway Width

Roadway and travel lane widths are directly associated with a roadway's ability to carry vehicular traffic. On Major and Minor Collector streets, a 12' lane is required for each direction of travel unless developed restrictions on the borders of the roadway prohibit such widths. In addition to the travel width, minimum shoulder/parking lane widths are also required to accommodate parked or stalled vehicles. Roadway widths not meeting the Geometric Design Standards will result in decreased performance of the particular roadway and additional travel demand on the adjacent roadway network components. For example, a substandard Major Collector roadway may result in additional travel demand on an adjacent Minor Collector street resulting in an overburden for adjacent landowners. Similarly, additional local circulation may result on an adjacent Minor Arterial resulting in reduced mobility for regional trips.

Non-Motorized Facilities

Sidewalks and/or trails are recommended to be adjacent to all Minor Collector, Major Collector, and Minor Arterial roadways within Jordan to accommodate pedestrian, bicycle, and other non-motorized travel in a safe and comfortable manner. These roadways are expected to carry a significant amount of vehicular traffic and separation of travel modes is recommended for user safety. At the discretion of the City, in commercial and industrial areas, the requirements for trails and sidewalks may vary to accommodate additional pedestrian and bicycle traffic and provide connectivity according to the **Existing and Planned Non-Motorized Facilities Map (Map 3-4)**. Future improvements should be considered in conjunction with City Standards identified in the City Code and this Comprehensive Plan, and the City's identified trail gaps shown on its **Existing Park and Recreational Areas Map (Map 3-5)**.

MAP 3-4: EXISTING AND PLANNED NON-MOTORIZED FACILITIES

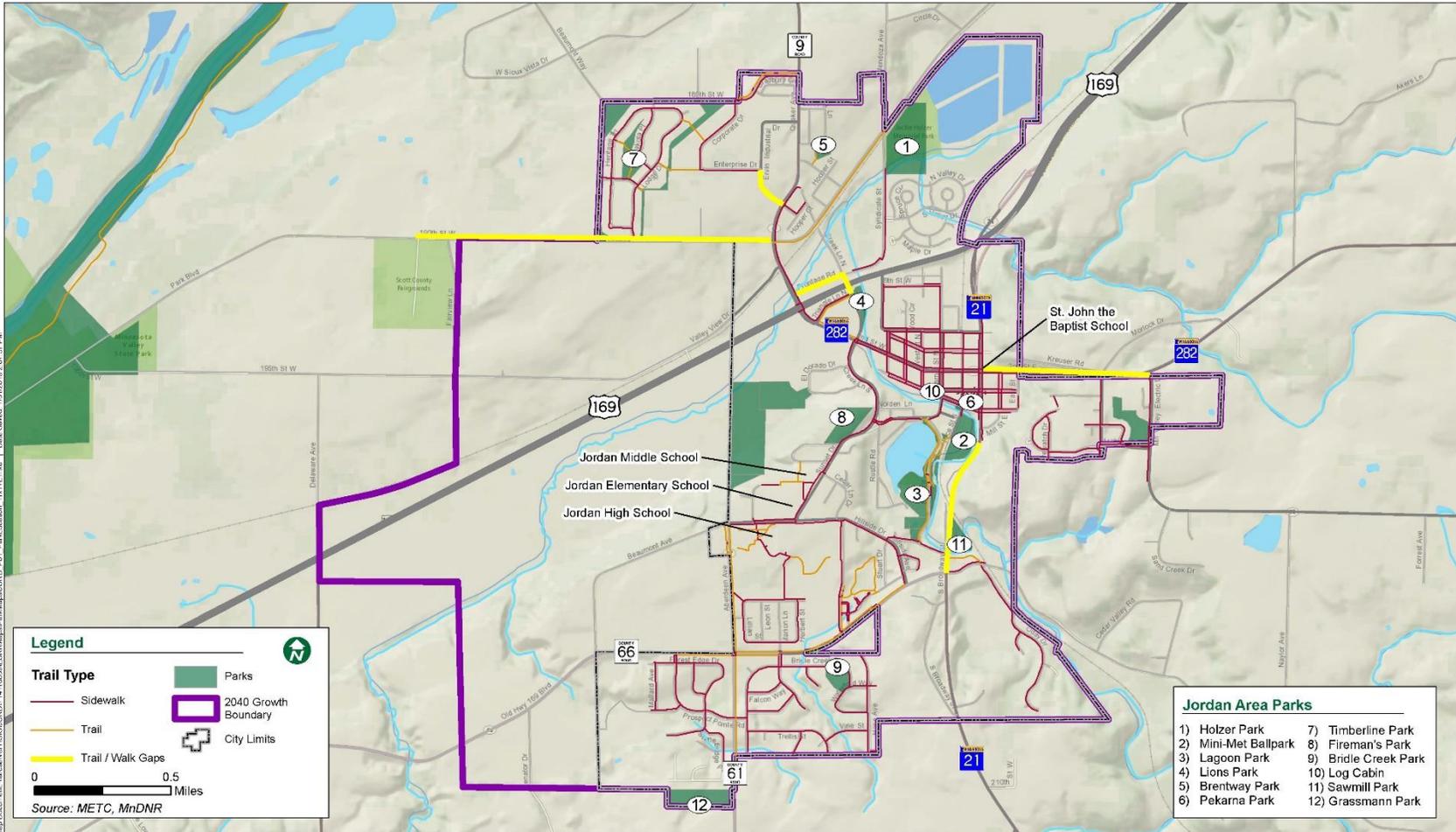


MAP 3-5: EXISTING PARK AND RECREATION AREAS



2040 Comprehensive Plan
Jordan, Minnesota

Existing and Future Trails and Parks
January 2019



Along Minor Arterials, a minimum 8' bituminous trail is recommended on at least one side of the roadway. Similar to the type of travel on the adjacent roadway, the trail will accommodate higher volume and longer pedestrian and bicycle trips. A 10' bituminous trail would be more desirable as the 10' width would better accommodate two-way travel safely. Trails and/or walk should be provided along both sides of Minor Arterials to facilitate travel to safe crossing locations.

Along Major Collector roadways, an 8' bituminous trail and 6' concrete walk are recommended on either side of the roadway to accommodate local pedestrian and bicycle travel. The pedestrian facilities on both sides of these roadways allow for pedestrian travel within the corridor without introducing excessive crossing demand on Major Collectors. A 6' concrete walk and 8' bituminous trail will accommodate pedestrian travel along the corridor, as well as provide a safe, comfortable link between lower volume residential streets and the other pedestrian facilities within the community.

Along Minor Collector roadways, a 6' concrete sidewalk is recommended on each side of the roadway. With the anticipated vehicular volumes on Minor Collector streets, pedestrians can safely cross the roadway; however, pedestrian travel along the roadway may become uncomfortable.

Medians

Medians are recommended on several Major Collector roadways under the jurisdiction of the City. Medians on Major Collector roadways assist in accommodating significant vehicular volumes at acceptable travel speeds for adjacent land uses. While maintaining the travel lane widths required for traffic, the total pavement width is reduced, creating a more appealing and acceptable travel corridor. Trees and other landscaping can be included within medians on city Major Collector roadways, provided they do not compromise minimum clear zone requirements and do not interfere with traffic control devices. Medians also allow for more comfortable pedestrian crossings of Major Collector roadways by providing a safe haven for pedestrians to assess crossing opportunities one direction of vehicular travel at a time.

Design Speed

The design speed of a roadway is generally related to the roadway's function in the system. The focus of Minor Arterial roadways is mobility; therefore, these roadways should be designed to accommodate higher travel speeds. Likewise, Minor Collector roadways are more focused on accessibility and should be designed to accommodate lower travel speeds. The function of Major Collectors is balanced between mobility and accessibility; therefore, these roadways should be designed accordingly. **Table 3-6** below presents the recommended design speed for the buildout of Jordan's future roadway network.

**TABLE 3-7
ROADWAY DESIGN SPEED GUIDELINES**

Functional Classification	Design Speed ⁽¹⁾
Minor Collector Street	30 mph
Major Collector Roadway	35 – 40 mph
Minor Arterial Roadway	45 – 55 mph

⁽¹⁾ At the discretion of the City Engineer for City roadways, with approval by the City Council

Right-of-Way Width

Right-of-way width is directly related to the roadway's width and its ability to carry vehicular and pedestrian traffic in a safe and efficient manner. The roadway right-of-way widths identified in **Figures T-13, T-14, and T-15 of Appendix C** are the minimum required for major collector, minor collector, and local streets, respectively.

- For Minor Collector streets in residential areas, a minimum right-of-way width of 80' is necessary for the added roadway width, as well as to provide added setback distance between the roadway and homes along the roadway.
- Right-of-way widths greater than 100' will be required on Major Collector roadways within commercial areas to accommodate the potential for higher traffic volumes and the need for additional lanes.
- All right-of-way requirements may be increased at the discretion of the City Engineer, with the approval of the City Council.
- Refer to Scott County's right-of-way requirements for county roads in their current Transportation Plan. The City should obtain identified local, county, and state right-of-way through the platting process to accommodate long-term roadway and sidewalk/trail needs.

VI. EXISTING SYSTEM EVALUATION

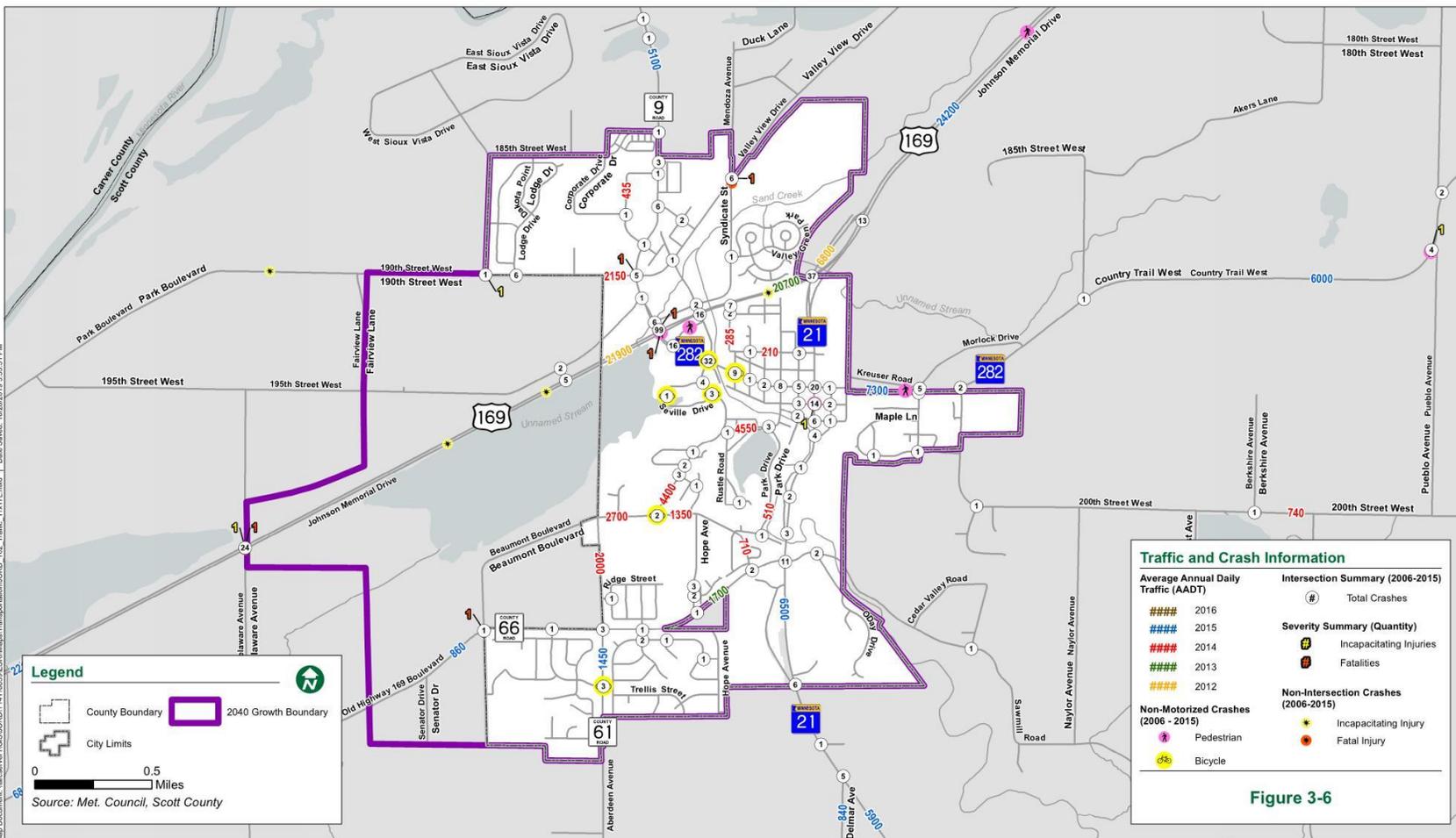
Sand Creek, two railroad lines, TH 169, the bluffs/ravines, and numerous wetlands have bisected the city and impacted the development of the existing transportation system in Jordan. These factors, access locations to TH 169, and the lack of Major Collector roadways within the City of Jordan has resulted in an overreliance on the Minor Arterial roadways of TH 21 and TH 282 for local circulation and connectivity. The use of Minor Arterial roadways for local traffic creates challenges to maintaining the highways' ability to provide regional mobility. Currently, most traffic desiring to access TH 169 has to funnel its way through the downtown area of Jordan or utilize the Creek Lane extension between TH 282 and Sunset Drive. As population and business attractions grow, increases in traffic volumes have the potential to negatively impact the downtown area by reducing pedestrian and local roadway mobility, increasing traffic congestion, and increasing parking problems. The City's ability to develop adequate Major Collector roadways is critical to maintain a satisfactory roadway system in the Jordan area and preserve the downtown area of Jordan as a desirable commercial area.

The existing transportation system within the City of Jordan currently provides sufficient transportation service to the city. Generally, the transportation system operates effectively, however some safety concerns and system continuity deficiencies exist.

A. Traffic Safety

Map 3-6 illustrates traffic and crash data on the existing system.

MAP 3-6: EXISTING TRAFFIC VOLUME & CRASH DATA



A planning-level analysis of the existing transportation system in Jordan was completed and included evaluating crash records to quantify number of crashes occurring at each intersection and to determine where trends may exist. TH 169 at TH 282 has a high crash rate. MnDOT and the City have separately analyzed this location for a future interchange. Removing this at-grade intersection would reduce the number the crashes and eliminate the conflict points associated with TH 169 traffic, as well as improve mobility. MnDOT completed a pavement rehabilitation project along TH 169 through the intersection with TH 282. The project included some safety improvements including pedestrian actuation, a new advanced notification signal for southbound motorists, lengthening of turn lanes, and removing a former hydroplaning problem on northbound TH 169 near Sand Creek.

Pedestrian safety across TH 169 is also a concern. The 2014 project included the addition of a raised median, which functions in part to prevent pedestrians from attempting to cross TH 169 away from the signalized intersection where traffic control measures offer some level of protection. In 2010, the City analyzed five alternatives for an underpass/overpass of TH 169 and considered implementing the preferred alternative with the 2014 project while MnDOT already had pavement removed and traffic diverted. It was determined the cost for implementation of a pedestrian underpass was too great, however. The cost of implementing such a project would be sufficiently greater without the benefit of joint project opportunity. Therefore, it is recommended pedestrian and bicycle facilities be implemented in conjunction with a future TH 282 / TH 169 grade separation project rather than as a standalone project.

Growing reliance on TH 282 for access to TH 169 and CR 9 is currently creating congestion and safety issues at several adjacent local roadway connections. Per the planning level traffic analysis completed by Scott County and its consultant, TH 282 between Triangle Lane and TH 169 is over capacity in its existing condition. These conditions are anticipated to worsen over the next 22 years, until TH 282 is reconstructed with additional lanes in conjunction with a TH 169 / 282 grade separation project. The statistically least safe intersections in the City of Jordan are generally along Highway 282, particularly at Highway 169, Triangle Lane, and at Creek Lane. The intersection of TH 21 / CR 66 / Sawmill Road also sees a relatively high crash frequency.

Creek Lane has been a source of public frustration in addition to the statistical traffic safety issues. In 2015 after much discussion, the City requested details on the required submittals as part of a permitting process for installation of a traffic signal at the intersection. In response, MnDOT completed an abbreviated intersection control evaluation which identified significant delay for motorists, particularly at the northbound Creek Lane intersection leg. MnDOT concluded it would not permit a signal or four-way stop condition at this intersection, but that it would permit and support funding of a roundabout at the intersection. The roundabout would address the capacity and safety deficiencies at this location, as well as promote efficient and safe movement of traffic cohesively with likely future interchange configurations. It is recommended the City continue to pursue State funding of a roundabout at this intersection based on MnDOT's recommendation, funding support, and permit support. Likely programs for such funding include MnDOT's biannual Cooperative Agreement Funding Program and the Local Road Improvement Program funded in varying levels by the biannual state bonding bill.

B. Traffic Volumes

The existing traffic volumes within the area were collected from MnDOT and Scott County and are represented in **Map 3-6**. Roadway analysis indicates that the system operates well for most roadways within Jordan. Roadway segments in Jordan currently operating at near congested levels include TH 169 north of TH 21, and TH 282 between Creek Lane and TH 21. Roadway

segments operating at a periodically congested level include TH 169 between TH 21 and TH 282 and TH 21 between the TH 169 northbound entrance ramp and CR 66.

C. Jurisdictional Issues

TH 282 has been identified as potential turn back candidates from the state to Scott County; however, no plans are in place to complete the transfers.

173rd Street West is a local township road. While this roadway is outside of the growth boundary, it has been identified in the TH 169 Corridor Management Plan as a future interchange location and in the Principal Arterial Intersection Conversion Study as a low priority potential future grade separation. A corridor in this location is also identified for an east/west study by Scott County for a future county roadway. Upon completion of the grade separation, this roadway may be appropriate under Scott County's jurisdiction.

Changes in roadway jurisdiction are rare, but these 'turnbacks' do occur on occasion. In January 2013 MnDOT published its Phase 1 Report for the Jurisdictional Realignment Project (<http://www.dot.state.mn.us/d4/projects/Jurisdiction/Report.pdf>). The overall objective for this project is to ensure that Minnesota roads are owned and operated at the right jurisdictional level. Placing roadways at the correct jurisdictional level enables decisions to be made at the appropriate political level for the roadways served and aligns appropriate funding sources for the functional classification of roadway.

MnDOT has identified Trunk Highway 282 as a potential jurisdictional transfer to Scott County in the future. Scott County has indicated they do not anticipate this occurring in the near term but has acknowledged MnDOT's desire to transfer the roadway. Jurisdictional transfers typically require the larger agency to fund the reconstruction of or reconstruct the roadway as part of a turnback agreement. It is noted MnDOT intends to reclaim and reconstruct Highway 282 in 2021, though the City is not aware of any related, specific turnback discussions.

In its 2040 comprehensive plan, Scott County has identified CR 61 (Aberdeen Avenue), between CR 66 (Old Hwy 169) and the southerly city limit, as a candidate for future jurisdictional transfer. No discussions have occurred between the City and County regarding the City's willingness to accept this transfer or the conditions under which the transfer would occur.

D. Relevant Area Transportation Studies

Several studies have been completed in recent years with varying direct and indirect impacts on the City of Jordan's Transportation Network. For historical context and to exhibit changing perspectives/priorities amongst agencies, the studies are listed chronologically from old to new.

TH 169 Corridor Management Plan (MnDOT, 2002)

In May of 2002, the State Highway 169 Corridor Management Plan (CMP) was issued by MnDOT. This report covered a 73-mile stretch of TH 169 from I-494 to Mankato. The purpose of the CMP was to create a better understanding of the issues and concerns along the corridor, as well as to develop consensus with corridor partners for a long-term vision and action plan that can be implemented over time.

The CMP recommended transitioning TH 169 to a freeway facility (limited access, no at-grade intersections) from Interstate 494 to Belle Plaine. Recommendations relative to the City of Jordan and the surrounding area from the CMP are outlined below.

- **173rd Street (listed as County Road 65 in CMP)** – Two concepts were developed for this intersection. Concept 1 shows an overpass and Concept 2 shows a folded diamond interchange. Accommodating an interchange in this area is particularly difficult due to the proximity to the spur line, bluff area, and floodplain. Sand Creek Township indicated that it would prefer to have an interchange rather than an overpass at this location, given the spacing between CSAH 14 and TH 21. Scott County also indicated that CR 65 has potential to serve as an arterial route to the east. If it does, the County would prefer an interchange at this location.
- **TH 282** – this area was identified for analysis in a separate sub-area study and is described below.
- **CSAH 59** - One concept was developed for the CSAH 59 intersection. The City of Jordan sees this interchange as serving the southern access to the city. The concept for this location shows a folded diamond interchange with limited frontage roads. Additional local roads would be incorporated as development occurs. St. Lawrence Township and MnDOT agreed that the concept was feasible and met the transportation needs of the area.
- **CR 66** - Three different concepts were developed for the CR 66 intersection. One of the concepts provides an overpass at CR 66; the other two concepts show a full diamond interchange and a folded diamond interchange. The CMP recommends that an overpass be developed for this area, unless Scott County decides to pursue an east-west arterial alignment in this location. If an east-west arterial alignment is pursued, the TH 169 CMP supports an interchange. As outlined below, the CSAH 8 Corridor Preservation Study identifies this location for a future interchange.

TH 169/TH 282 Interchange Alternatives Study (MnDOT, 2001-2004)

MnDOT led the development of numerous (15-20) interchange concept-level alternatives for the US 169/TH 282 area. 'Concept-level' implies the layouts were completed to identify potential connection points of adjacent roadways based on access spacing guidelines and bridge locations generally identified, but engineering design work was not substantially completed.

Consensus was not reached on any interchange alternative. To summarize in general, an impasse was reached between a desired lower project cost by MnDOT conflicting with the desire to maintain all existing business access and property by the City. Grade separation of TH 282 and US 169 were desired by all. The City also desires grade separation of Creek Lane from US 169, though this is not a priority for MnDOT beyond disconnecting it at grade from US 169. Scott County also desired grade separation and would prefer grade separation of CR 9 from the Union Pacific Railroad located 750 feet north of the primary subject intersection.

CSAH 8 Corridor Preservation Study (Scott County, 2005)

Scott County completed a corridor preservation study for the extension of CSAH 8 west of TH 21 to TH 169. This study identified a future alignment for CSAH 8 that generally follows the township border between St. Lawrence and Helena Townships. The study also determined a short-term connection to TH 169/TH 25-CSAH 5 interchange at by means of a frontage road to be located parallel to the highway. If, or when, development in the area requires an additional interchange to TH 169 the study recommends continuing the alignment of CSAH 8 along the township/section line west, past CR 66, to a future interchange location with TH 169. This alignment could eventually be connected to a frontage road system on the west side of TH 169, or the existing Park Boulevard corridor that continues north into Jordan. At present, there are no specific plans to proceed with

construction of the future alignment, and the study may be used by Scott County for future right-of-way preservation plans only.

County Highway 8 Corridor Study (Scott County, 2013)

Scott County completed a supplementary corridor study along County Highway (CH) 8 from TH 21 to I-35, with particular focus on the area between TH 13 and I-35. Scott County's 2030 Comprehensive Plan envisioned CH 8 ultimately connecting US Highway 169 and I-35. The CSAH 8 Corridor Preservation Study (2005) identified a 150-foot corridor to be preserved for a future road connection between TH 21 and US Highway 169. The major road connection via CH 8 as contemplated in 2005 emphasized the need for it to serve as an important east-west arterial for regional and local users. Additionally, eastern sections of CH 8 were in need of major improvements due to age and condition at the time the study was initiated, with pavement over 40 years old and a crumbling sub-surface. The roadway also has narrow shoulders, sharp horizontal and vertical curves with limited visibility, and no turn lanes at a number of intersections.

The purpose of the County Highway 8 Corridor Study was to define a vision for the roadway that incorporates long-term corridor preservation and identified potential safety and roadway improvements. The study also recommended a long-term plan for preserving rights-of-way and managing access along the corridor.

The study found that a two-lane roadway, with properly preserved condition and maintenance, should continue to be sufficient for the next 20 years (until at least 2033). The study had the following recommendations:

1. Roadway jurisdictional agencies, including Scott County, should continue enforcing the County's Access Spacing Guidelines to maintain 1/2 mile full access spacing on the CH 8 corridor.
2. Scott County should coordinate with the local road authorities so new roads in the supporting road network provide interconnectivity and support access spacing guidelines for CH 8 as a Future Principal Arterial.
3. Scott County should evaluate inconsistent private and public accesses during the design of road reconstruction projects or adjacent subdivision developments to determine if any access modifications or removals along CH 8 are appropriate.
4. Scott County should plan for an ultimate 200-foot wide corridor through the development process and when opportunities arise for right-of-way acquisition. Coordinate with developers to preserve future right-of-way needs beyond 150 feet when possible. Use tools such as PUDs and the Public Values Incentive Program to acquire right-of-way for long-term needs.
5. Scott County should evaluate whether front-yard building and septic system setbacks in the Zoning Ordinance should be increased along major arterials like CH 8 to reduce creating additional non-conforming structures and preserve future right-of-way needs.
6. Scott County should evaluate opportunities to improve safety and mobility for long-term realignment around Cynthia Lake, St. Catherine Lake, and McMahan Lake. Future improvements should be evaluated for opportunities to improve water quality and provide a recreational amenity.

7. The intersection of TH 13 and CH 8 should continue to be monitored and appropriate solutions implemented in response to a relatively high severity crash rate, which was four times the expected level as of 2013.
8. Dakota County and Scott County should collaborate on a trail connection along Scott CH 8 and Dakota CH 70.

TH 169 / TH 282 / County Road 9 Interchange Alternatives Review & Official Mapping (City of Jordan, 2012-2014)

The City of Jordan through its EDA contracted Kimley-Horn to re-evaluate, estimate costs of, collect public feedback on, pursue consensus via an evaluation matrix on seven interchange alternatives, titled A through G, first considered between 2001 and 2005. This review concluded with a meeting between MnDOT, Scott County, and the City at which consensus was not reached regarding an agreed, preferred interchange alternative.

The City proceeded with official mapping of an interchange footprint comprised of roughly estimated grading boundaries for alternatives "F" and "G", commonly referred to as the Kimley Horn alternatives first developed in 2004. These alternatives include significant bridges and flyovers at higher construction cost, but generally preserve existing access points, limit any acquisition of developed business property, and one maintains the existing alignment of US 169. As the Official Mapping effort was undertaken, a letter was sent to MnDOT and Scott County notifying them of the official mapping process for the City selected alternative. The letter is considered the final report document for this initiative and is available on the City of Jordan's website as of the drafting of this Plan: http://jordanmn.gov/wp-content/uploads/2016/03/Final-Draft_TH-169-Report_082614.pdf.

Downtown Parking Study (City of Jordan, 2013-2014)

In response to resident and business owner concerns in the downtown area, the City and its Economic Development Authority conducted a parking study in summer, 2014 to quantify any deficiencies in parking and potential solutions to addressing them. The study found there was a sufficient total number of stalls within the full study area of downtown, but some specific areas particularly near TH 21, were deficient.

Since completion of the study, the City strategically installed time limit signage on select stalls to increase turnover for customer use and the City constructed two parking lots; one in front of the new City Council Chambers at 116 First Street and another at the north end of the Mini Met.

US 169 Access Management Plan, TH 19 to Scott County Road 69 (MnDOT, 2016)

The objective of this study was to develop an access management plan to serve as guidance for the county, cities, townships, MnDOT, landowners, and developers on desired access changes and future access locations in the corridor. The Study included several technical advisory committee (TAC) meetings comprised of stakeholders from along the TH 169 corridor. MnDOT prefaced the TAC meetings by noting challenges in reviewing recent developments along the corridor and lack of backage/frontage roads, particularly in the area near Bluff Drive.

The plan takes into consideration the function of US 169 in the regional road network, the planned growth of the communities, and the need for an adequate supporting road network necessary to support development. Additionally, the plan attempted to provide an appropriate balance between mobility and access. In general, this means directing traffic to future frontage/backage roads in lieu of existing driveway accesses directly to US 169. The decreased access, for heavy

trucks in particular, decreases convenience for those users but benefits the mobility of the TH 169 users (11% of which is also freight) and safety of all users.

The Study concluded with:

- A proposed public street spacing is identified in the US 169 Access Management Plan map.
- Traffic signals, roundabouts, or other intersection traffic control devices should only be constructed if they are justified. They should be located only at primary, full-movement, public intersections, preferably with roadways that are classified as a "Collector" and above.
- Left and right turn lanes should be provided at all full-movement intersections. Turn lanes should be designed to provide safe movement for traffic on US 169 and on the cross street. Generally, the turn lanes should be 500-feet long with a 180-foot taper.
- Where a minor arterial intersects US 169, the first full-movement intersection on the minor arterial should be spaced ¼ mile from the intersection with US 169. On an intersecting collector street, the first intersection should be spaced 1/8th mile from US 169. For other public streets, the spacing should be at least 300 feet from US 169.
- As property develops or redevelops, local roads should be constructed and existing access to US 169 removed and relocated.
- All lots in a new subdivision should be designed to take access from the internal street network.
- All new subdivisions should be designed with an internal street system that coordinates and connects to adjacent subdivisions and the planned local street network, resulting in parallel north/south routes as well as continuous east/west routes.
- New private access to US 169 is discouraged. Access to private property should be provided by the existing local road network whenever possible. Only when reasonably convenient and suitable access cannot be provided by the local road network, should direct access onto US 169 be allowed. Adjoining properties should share a common access when necessary to provide adequate stopping distance between access points.
- Existing direct private access to US 169 may remain in use, but may be subject to modification or closure at the time of development, redevelopment, or intensification in the land use, or a highway improvement project.
- Any new private access should be as consistent as possible with the plan.

Specific to Jordan, the Study proposes the future closure of Syndicate Street's connection to US 169 and closure/grade separation of Creek Lane at US 169.

Principal Arterial Intersection Conversion Study (Met Council & MnDOT, 2017)

As of the drafting of this Plan, the Study can be found online at:

<https://metrocouncil.org/Transportation/Planning-2/Transit-Plans,-Studies-Reports/Highways-Roads/Principal-Arterial-Intersection-Conversion-Study.aspx?source=child>.

The Principal Arterial Intersection Conversion Study considered needs at intersections on non-freeway principal arterials throughout the Minneapolis-St. Paul metropolitan area, specifically to set priorities for grade separations. Principal arterials are the region's highest type of roadway and are intended to provide reliably safe and high-speed travel over significant distances. While most principal arterials are limited-access freeways, the system also includes about 300 miles of non-freeway segments with at-grade intersections. In many cases, these intersections limit the highway's ability to best provide for long-term safety and mobility.

In total, more than 370 intersections were initially considered. Of those, 91 intersections were selected for more detailed study and were prioritized as low, medium, or high priority for grade separation projects (new interchanges or similar designs). The Study also recognized the importance of considering lower-cost/high-benefit at-grade treatments that could improve intersection safety and performance without grade separations.

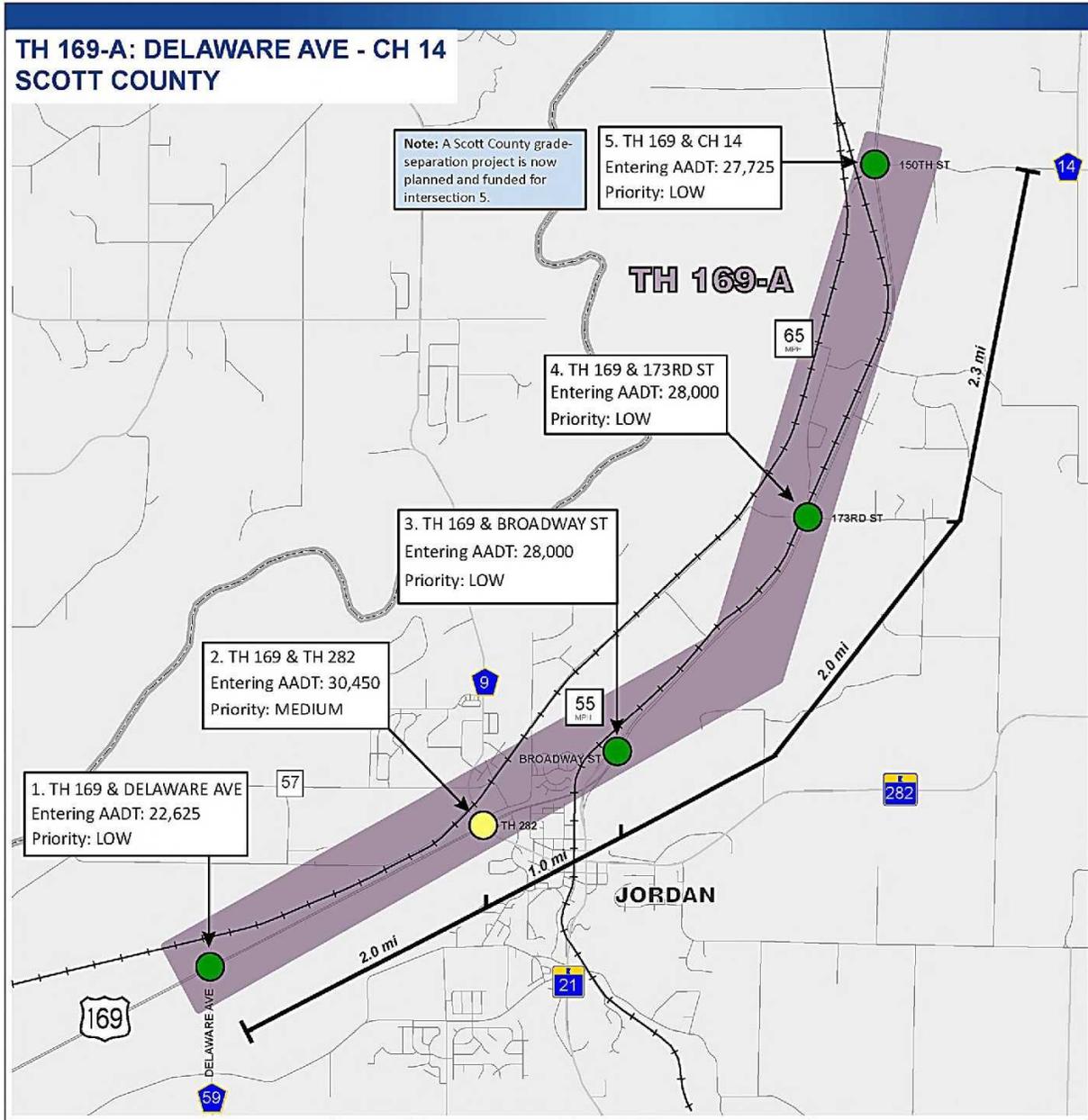
Since the study's completion, it appears to have influenced funding programs and opinions of MnDOT project priorities with focus on 'low-cost / high-benefit' interchanges and grade separation options. For example, full 'system interchanges' which users may solely interpret as an interchange, are costlier and thus less likely to be funded through upcoming programs. Conversely, 'quadrant interchanges' generally require only an overpass and rely on local roadway networks to make connections, albeit less convenient connections at lower cost. The study's conclusions promote the funding of quadrant interchanges as potential solutions for lower priority needs. All recommendations within the study are acknowledged as high level, planning recommendations for prioritization of funding as opposed to specific site solutions for individual projects.

Of the 91 intersections selected for more detailed study:

- 34 were categorized as high-priority for grade-separation. The high-priority intersections often exhibit needs that can justify high-capacity at-grade improvements or grade-separation. These intersection locations (and the corridors they are within) should be addressed in more detail to determine the right-sized investments.
- 27 intersections studied in the second phase were categorized as medium-priority for grade-separation. Per the study, the medium-priority intersections typically do not need grade-separation projects based on current demand. However, additional studies at these locations could show needs for high-capacity at-grade improvements or limited/emerging needs for grade-separated elements.
- The remaining 30 intersections studied were categorized as low-priority for grade-separation. These locations generally do not need major changes or projects based on current demand and any problems can most likely be addressed with at-grade projects. However, some low-priority intersections are located on corridors near medium- and high-priority intersections or may be in growth areas.

Five intersections along TH 169 near Jordan were evaluated. TH 169 / TH 282/ CR 9 was identified as a medium priority, near the high priority rank. The following image is from the Study.

MAP 3-7: PRINCIPAL ARTERIAL CONVERSION STUDY



190th Street & County State Aid Highway 9 Traffic Study (City of Jordan, 2017)

This study was completed in preparation of a newly opened commercial/industrial growth area created by the City of Jordan west of CSAH 9, south of 190th Street, north of US 169, and east of Delaware Avenue. The study conceptualized the buildout of this land area as well as the relocation of the Minnesota Renaissance Festival to the area, and quantified resulting traffic volumes based on three City determined scenarios. The results identified the need for future intersection improvements at CSAH 9 / 190th Street, the expansion of 190th Street to four lanes upon reconstruction or introduction of new development, and creation of a suitable roadway network within the study area.

Creek Lane / Hwy 282 Intersection Study (MnDOT, 2015-2017)

MnDOT completed analysis of traffic operations at the Creek Lane / 282 intersection. Their evaluation involved collection of traffic data by way of video surveillance over a 48 hour period, and evaluation of that data under both current (2016) traffic levels and future (2036) forecasted traffic levels for four alternatives:

1. Current configuration – Two Way Stop
2. Four Way Stop
3. Traffic Signal
4. Roundabout

The following is a summary of the conclusions of the analysis:

- Existing (2016) conditions have the lowest total delay. Consideration should also be given to the Creek Lane delay, specifically the northbound, left turns on to 282 from Creek Lane. That delay was quantified as an average of about 20 seconds and maximum of about 90 seconds. Longer Creek Lane delay typically translates to bad motorist decisions which in turn can translate to serious crashes.
- MnDOT would not support, and would not permit, installation of a traffic signal at Creek Lane / 282 based on the results of the analysis. It would increase motorist delay and increase crashes. MnDOT is acknowledging problems at the intersection, but their staff have noted that the signal does not see problems it would solve, rather that it seemed to make delay increase and safety decrease. Additionally, and perhaps most critical from a MnDOT permitting perspective, the intersection did not meet warrants (minimum standards) for a signal.
- MnDOT would support a roundabout at Creek Lane / 282. They would support it while it would increase total intersection delay (help Creek Lane delay but add 282 delay), but perhaps more importantly, would be the safest alternative.
- MnDOT has noted potential needs for adjustment to the Radermacher's access, potentially on the Creek Lane side. A layout of the intersection design could confirm or deny the need for adjustment.
- The '5th leg' of the intersection, which is a driveway that travels around the back of Hometown bank, would need to be removed from the intersection and relocated elsewhere if intersection improvements are to be permitted.

Following the presentation of these results by MnDOT, the Jordan Council began pursuit of a roundabout for the intersection of Creek Lane & Highway 282. The City was awarded a \$1 million grant through the Local Road Improvements Program. The City plans to construct the roundabout in 2021 after receiving this funding. The City has also applied for a \$710,000 grant through the MnDOT Local Partnership Program (LPP) for additional project funding.

US 169 Mobility Study

The project was guided by three committees, the Project Management Team (PMT), the Technical Advisory Committee (TAC), and the Policy Advisory Committee (PAC). The PMT, comprised of staff

from MnDOT, Scott and Hennepin Counties, the Metropolitan Council, and the consultant team, guided development and ensured progress of the study. The PMT facilitated coordination among partner agencies, study committees, and the consultant team. The TAC, tasked with providing technical input on the study process, was staffed by the Shakopee Mdewakanton Sioux Community, county and city staff as well as MnDOT and Metro Transit. The PAC, staffed by elected and appointed officials from cities counties and partner agencies in the Highway 169 corridor, considered project information and provided input on the study process, issues, and recommendations.

The purpose of the project is to increase access to jobs and destinations, provide transportation choices, and improve safety and travel time for Highway 169 users. The needs of the project were:

- Improved connections between people, jobs, and other destinations throughout the corridor
- Move a growing number of people and goods with more travel options
- Solutions that fit within the existing transportation system, current policy plans, and financial constraints

Three alternatives were created to assess options along the corridor:

- Alternative 1: MnPASS along Highway 169 and BRT Service on Highway 169 and I-394 between Marschall Road and Downtown Minneapolis
- Alternative 2: MnPASS along Highway 169 and BRT Service on Highway 169 and Highway 55 Between Marschall Road and Downtown Minneapolis
- Alternative 3: MnPASS on Highway 169 between Marschall Road and I-494

The TAC came to consensus that Alternative 2 best met the project goals and recommended it for further development in the implementation plan because it provides service to a currently unserved area with a population that is most likely to use the service. The Recommended Improvements most effectively deliver the vision for mobility and access along the Highway 169 Corridor, including MnPASS, highway improvements, and bus rapid transit service. Details on the proposed improvements can be found on MnDOT's website at: <https://www.dot.state.mn.us/metro/projects/hwy169study/>

Minnesota Renaissance Festival (MRF) EIS Scoping & Traffic Study (Scott County & MRF, 2017+)

The MRF is planning relocation near the City of Jordan. They have purchased property accessible from Delaware Avenue, just north of US 169. The MRF is currently completing a traffic study as part of its required environmental review documentation. Depending on the outcomes of the study, potential improvements to US 169, 190th Street, County Road 9, Delaware Avenue, 195th Street, and/or intersections thereof may require improvement contingent on a variety of factors to be determined based on the event traffic volumes and developer intended routing.

VII. FUTURE ROADWAY PLAN

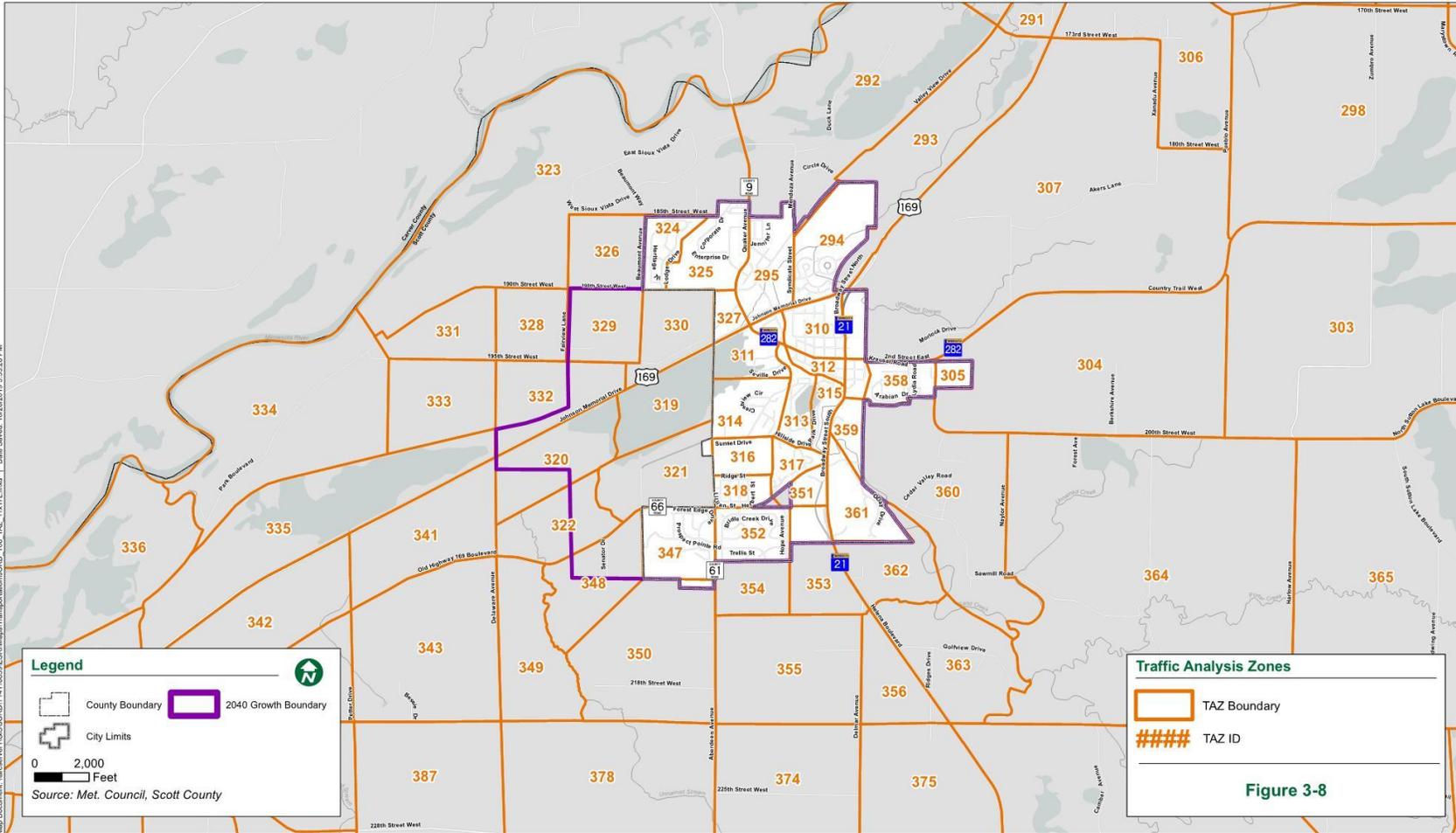
The transportation system in the Jordan area is in a rural to urban transition in response to the rapid growth experienced in the past 10 years and the anticipated growth for this area. As growth continues to occur, it will be important for the City to develop a roadway system that is efficient and consistent with the transportation system principles and standards outlined in Section II.

A. Traffic Forecast Modeling

Traffic forecast modeling was completed by Scott County and its consultant, as a Scott County Association for Leadership & Efficiency (SCALE) initiative. The memorandum contained in Appendix D details the modeling methodology and summarizes results in a county-wide context. Transportation Analysis Zones (TAZ) are illustrated in **Map 3-8** and tabulated in **Table 3-8**.

Forecasting, analysis, and mapping for the City of Jordan future transportation demands were completed by Scott County based on the revised population forecasts. Upon receipt of revised population and growth forecasts for the City of Jordan, discussion between Scott County Staff and the City Engineer for Jordan was conducted. Scott County Staff has concluded that updates to the model for compatibility with revised forecasts will not yield any significant change to the functional status, forecasted volumes, or transportation planning identified in this or Scott County's plan. As such, revisions to the TAZ figures or associated traffic volumes due to the population and employment changes were not incorporated in Scott County's or the City of Jordan's plans.

MAP 3-8: TRAFFIC ANALYSIS ZONES



**TABLE 3-8:
2040 TAZ DATA**

Met Council TAZ	Scott County TAZ	2014 Data					2020 Forecast					2030 Forecast					2040 Forecast				
		Households	Population	Retail Employment	Non-Retail Employment	Total Employment	Households	Population	Retail Employment	Non-Retail Employment	Total Employment	Households	Population	Retail Employment	Non-Retail Employment	Total Employment	Households	Population	Retail Employment	Non-Retail Employment	Total Employment
2164	205	4	8	0	0	0	21	53	0	61	61	57	153	1	142	143	97	273	1	210	211
2185	294	281	773	0	20	20	319	840	0	33	33	386	1012	0	33	33	440	1132	0	35	35
2190	305	0	0	5	73	78	0	0	7	156	163	0	0	6	211	217	0	0	6	258	264
2191	308	17	49	0	26	26	21	57	0	37	37	30	74	0	33	33	39	93	0	31	31
2192	309	0	0	98	0	98	0	0	140	0	140	0	0	121	0	121	0	0	110	0	110
2192	310	257	581	30	54	84	312	715	43	130	173	418	1034	37	188	225	517	1352	34	239	273
2193	311	0	0	77	0	77	0	0	112	0	112	0	0	98	1	99	0	0	90	1	91
2193	312	67	193	20	12	32	82	226	30	21	51	114	304	30	24	54	143	376	29	27	56
2193	313	80	231	6	9	15	97	264	9	16	25	128	344	9	19	28	158	414	8	20	28
2193	314	132	380	0	153	153	160	436	0	265	265	213	572	0	297	297	263	692	0	331	331
2193	315	25	72	5	0	5	31	85	7	0	7	45	119	7	0	7	58	152	7	0	7
2193	316	0	0	0	253	253	0	0	0	441	441	0	0	0	499	499	0	0	0	558	558
2193	317	142	409	0	17	17	168	459	0	30	30	217	584	0	33	33	262	687	0	37	37
2193	318	104	300	0	5	5	141	382	0	9	9	217	576	0	9	9	295	775	0	10	10
2195	324	173	551	0	0	0	194	573	0	7	7	227	639	0	16	16	250	652	0	24	24
2195	325	59	188	0	279	279	86	245	6	445	451	141	382	14	452	466	201	524	20	470	490
2198	347	133	468	0	2	2	237	709	0	4	4	455	1269	0	6	6	696	1894	0	8	8
2199	351	12	43	0	3	3	29	83	0	9	9	65	177	0	14	14	106	284	0	18	18
2199	352	252	900	0	4	4	295	959	0	6	6	377	1118	0	5	5	449	1206	0	4	4
2200	357	61	186	25	77	102	70	163	53	119	172	88	116	71	114	185	101	38	86	114	200
2200	358	108	330	0	0	0	133	378	0	0	0	181	494	0	0	0	226	598	0	0	0
2200	359	3	9	0	0	0	29	72	0	4	4	83	214	0	9	9	146	387	0	13	13
2200	361	35	107	0	0	0	75	201	0	0	0	158	419	1	0	1	253	671	1	0	1
TOTALS		1945	5778	266	987	1253	2500	6900	407	1793	2200	3600	9600	395	2105	2500	4700	12200	392	2408	2800

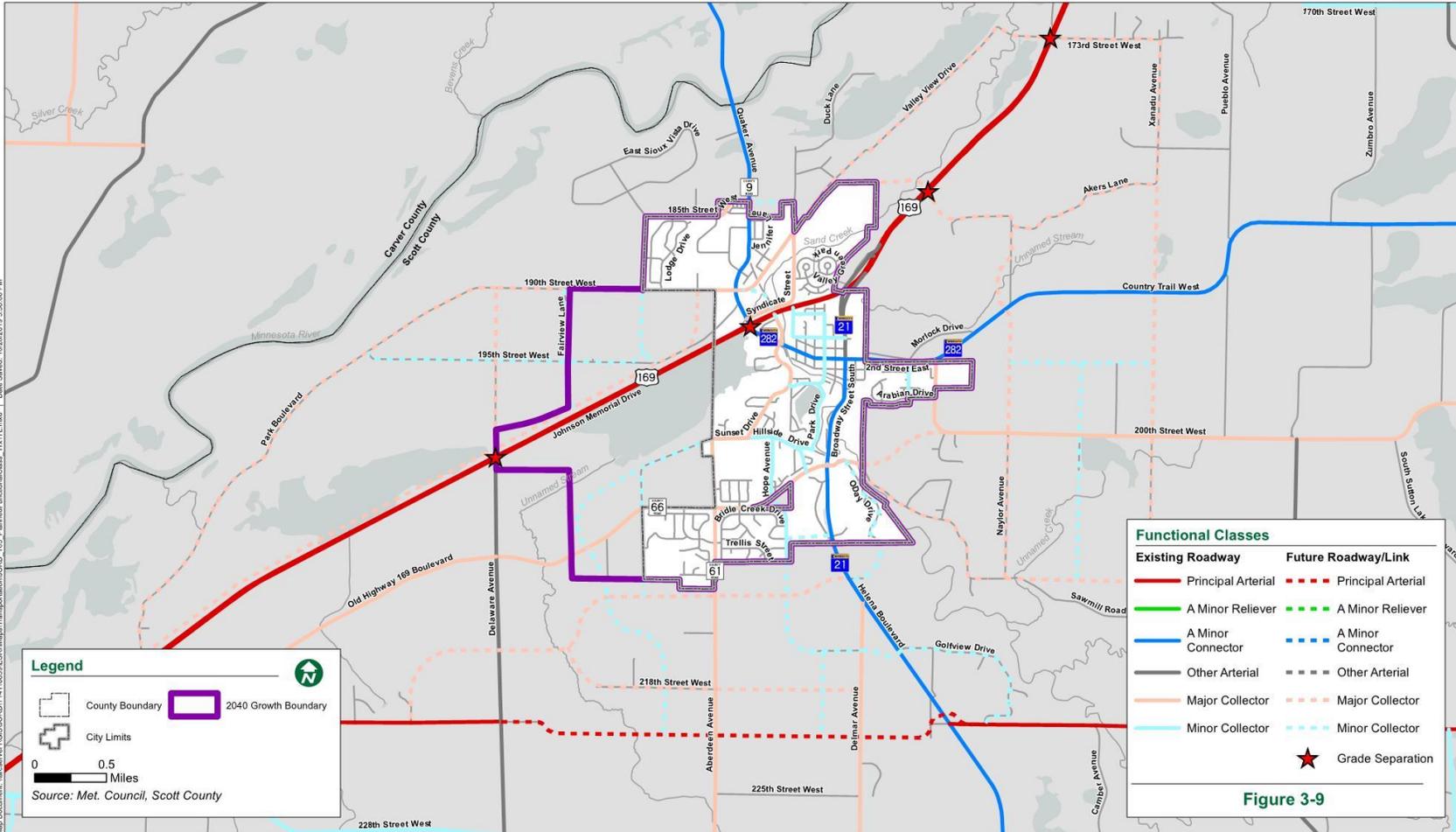
B. Future Roadway Corridors

A supporting future road network has been developed in consideration of long-term growth in the 2040 growth area and is illustrated in **Map 3-9**. This network was developed in consideration of the long-term land use vision for the area, the draft Scott County 2040 Comprehensive Plan Update, and the various past studies outlined in Section VI.

A suitable arterial-collector system to accommodate future development and traffic patterns is necessary in the growing community of Jordan. The existing county and state highways have historically provided much of the local circulation and connectivity; however, these roadways will be less capable of meeting both the future local and regional travel demands. A City collector system consisting of Major and Minor Collector roadways is recommended to provide acceptable local traffic circulation and access to developing areas, as well as to enable the Principal Arterial and Minor Arterial roadways to serve longer, regional travel. It is not anticipated that all the proposed collector streets will be constructed by 2040; rather, collector streets should be constructed as development occurs.

The roadway corridors identified are conceptual, based on network needs, and should be used as a guide for development of the City's roadway system. In most cases, the actual roadway alignments are flexible to meet the needs of future development, at the discretion of the City Engineer. If not already completed, additional studies will be necessary to determine specific roadway alignments and intersection spacing. It is recommended actual routes be further evaluated in conjunction with development demand, ideally before submittal of preliminary plats in the subject area.

MAP 3-9: 2040 ROADWAY FUNCTIONAL CLASS



C. Forecasted Traffic Volumes

Year 2040 Traffic volumes were developed for three scenarios:

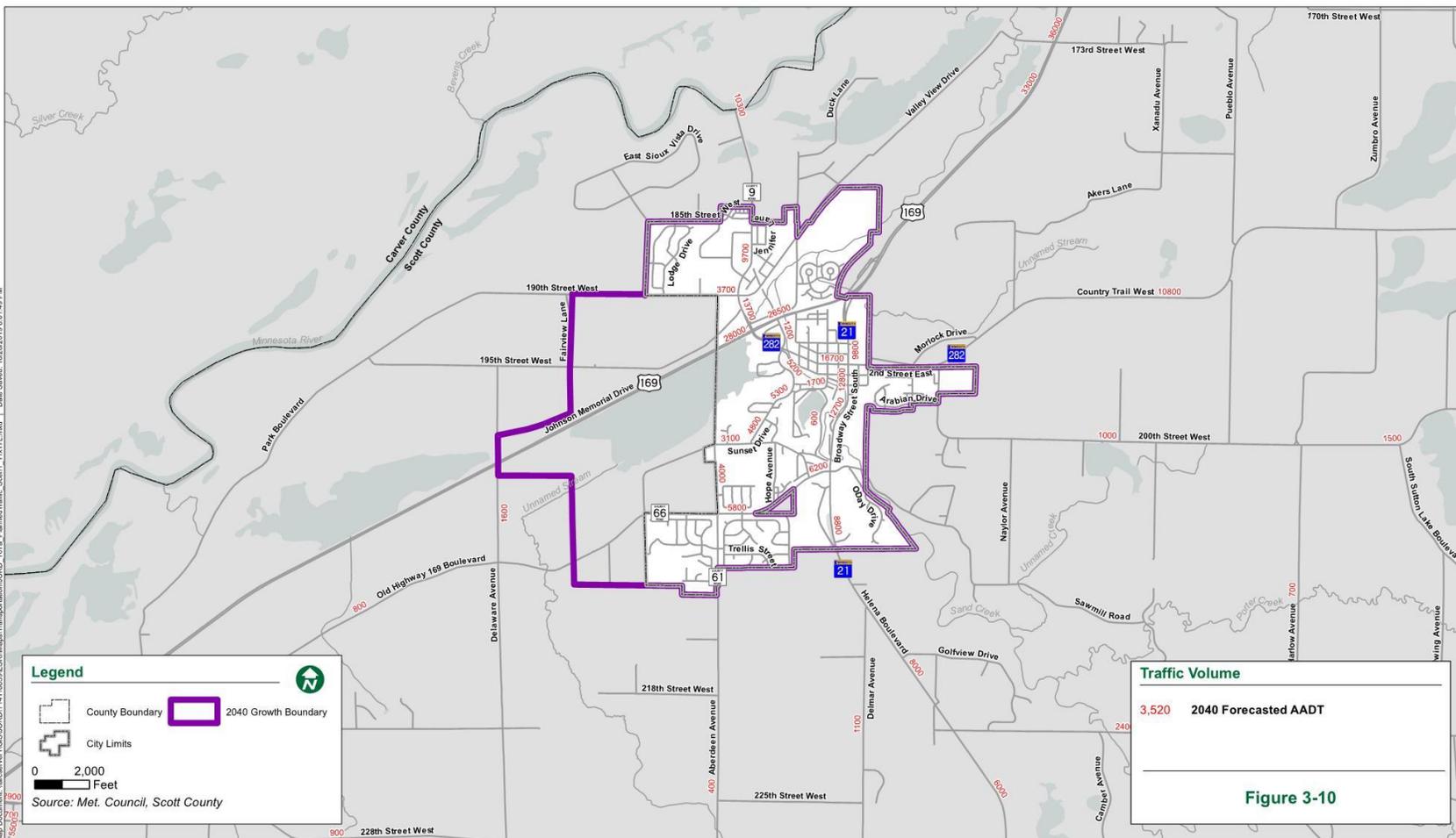
- 2040 Scenario 1: No Roadway Improvements (**Map 3-10**)
- 2040 Scenario 2: Funded Roadway Improvements in CIP 2017-2026 and STIP 2017-2020 (**Map 3-11**)
- 2040 Scenario 3: Potential Roadway Improvements for Study Including City/County 2040 desired capacity improvements (**Map 3-12**)

Roadway Safety and Capacity Needs

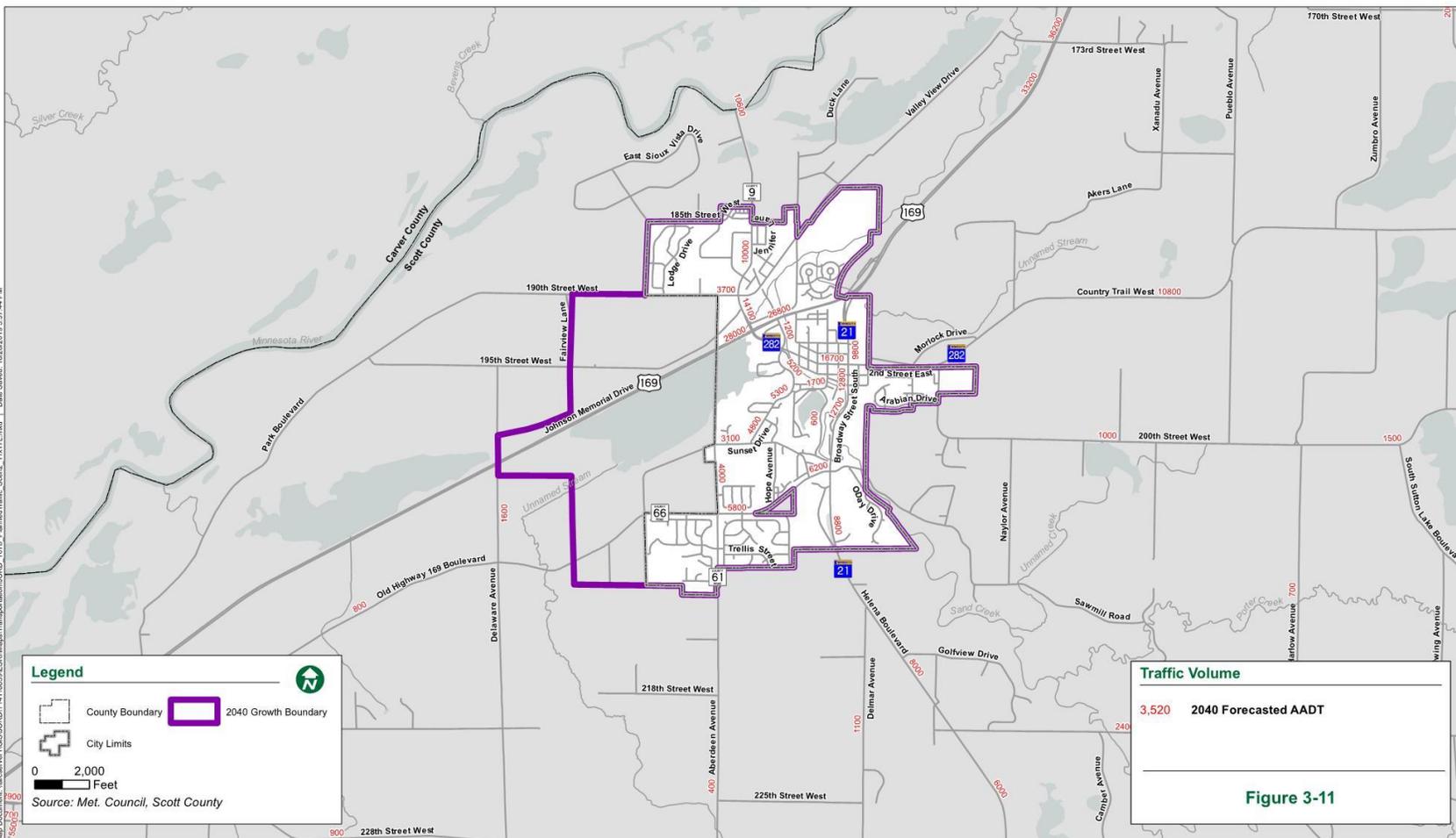
The forecasted average annual daily travel demands illustrated on **Maps 3-13, 3-14, and 3-15** having a volume to capacity ratio greater than 1 are recommended to be monitored and programmed for capacity improvements when necessary. Roadways that are periodically congested (having a volume to capacity ratio between 0 and 0.849) are generally identified as providing an acceptable level of service. The development of the future 2040 roadway network illustrated in **Map 3-9** is to provide alternatives routes to prevent capacity related issues.

The forecasted 2040 traffic volumes do not have significant burden on the existing local roadway system based on the Met Council TAZ data. In all 2040 conditions TH 21 and TH 282 are over capacity. Issues on TH 282 are anticipated to be addressed with a future grade separation project at 282/169/9.

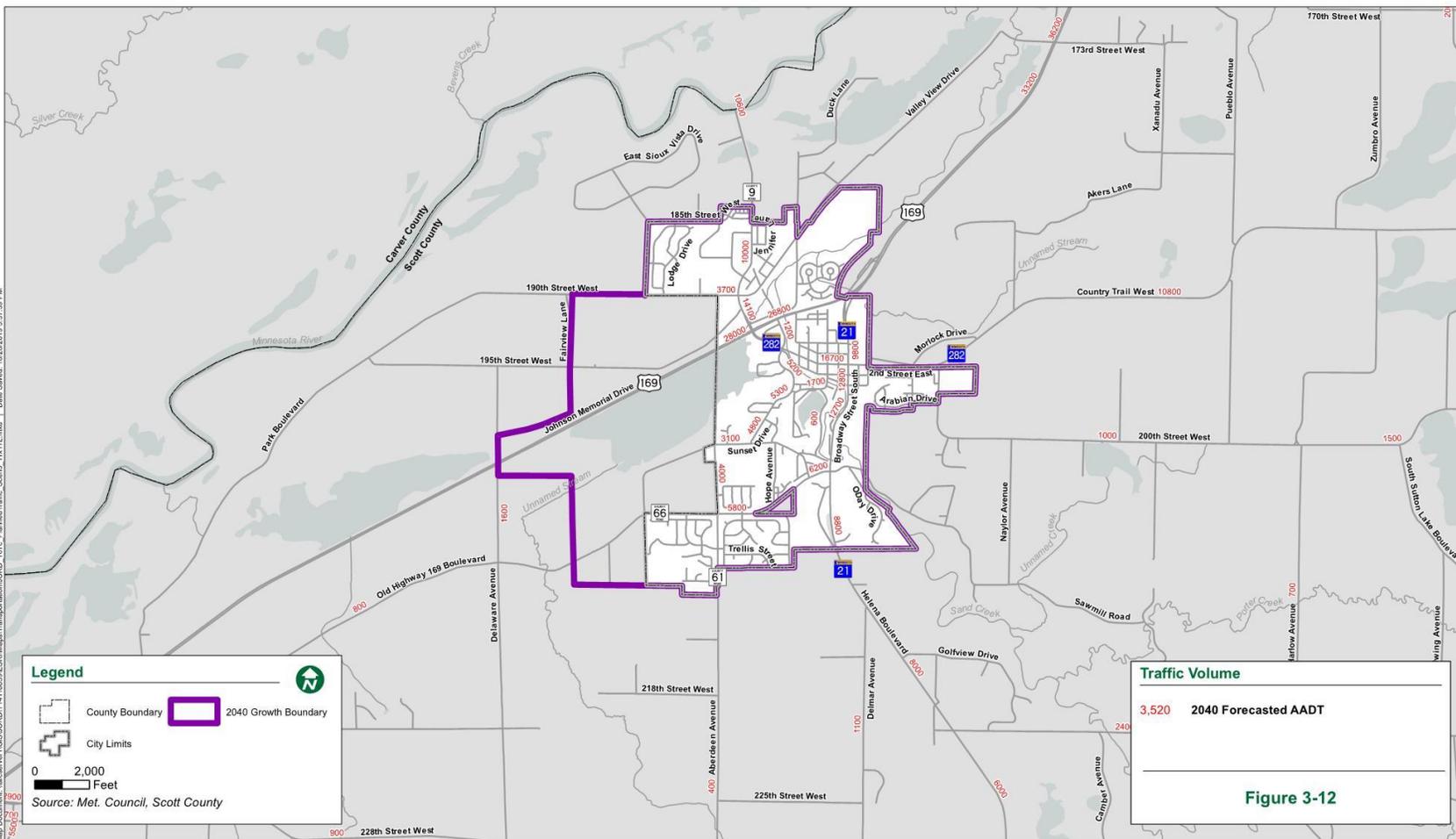
MAP 3-10: 2040 TRAFFIC VOLUMES (SCENARIO 1)



MAP 3-11: 2040 TRAFFIC VOLUMES (SCENARIO 2)



MAP 3-12: 2040 TRAFFIC VOLUMES (SCENARIO 3)

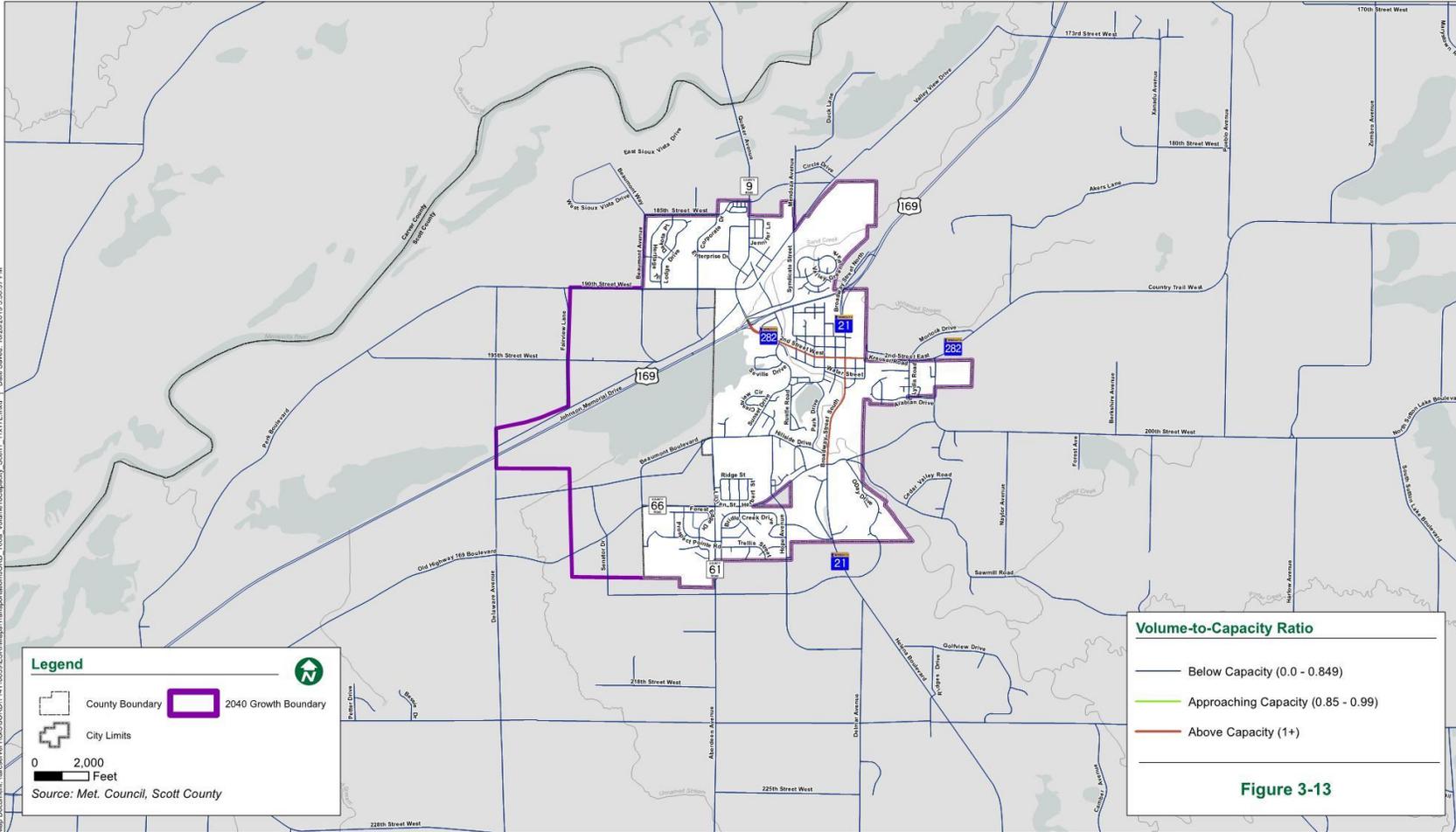


MAP 3-13: 2040 VOLUME TO CAPACITY (SCENARIO 1)



2040 Comprehensive Plan
Jordan, Minnesota

2040 Volume to Capacity (Scenario 1)
October 2019

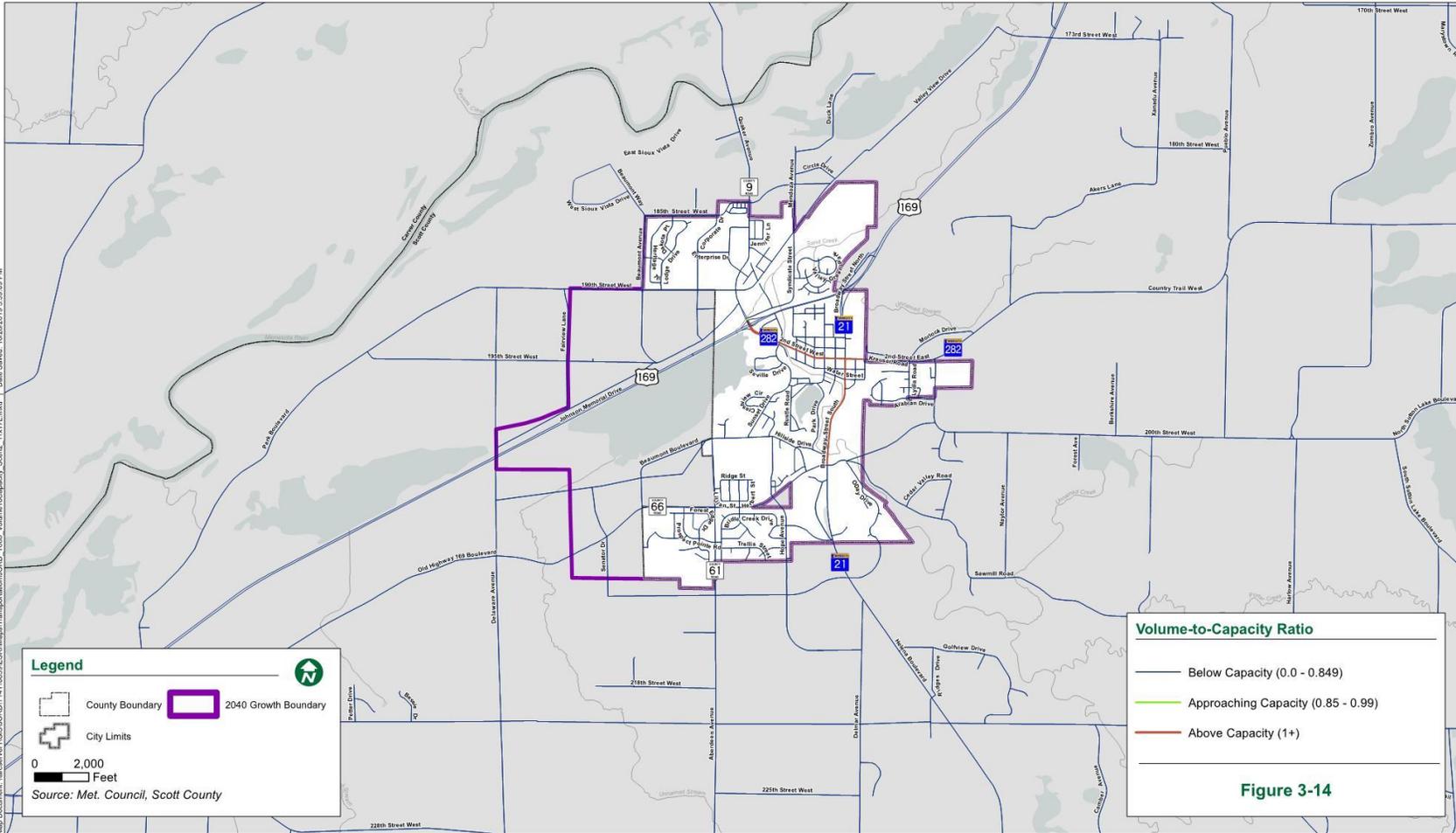


MAP 3-14: 2040 VOLUME TO CAPACITY (SCENARIO 2)

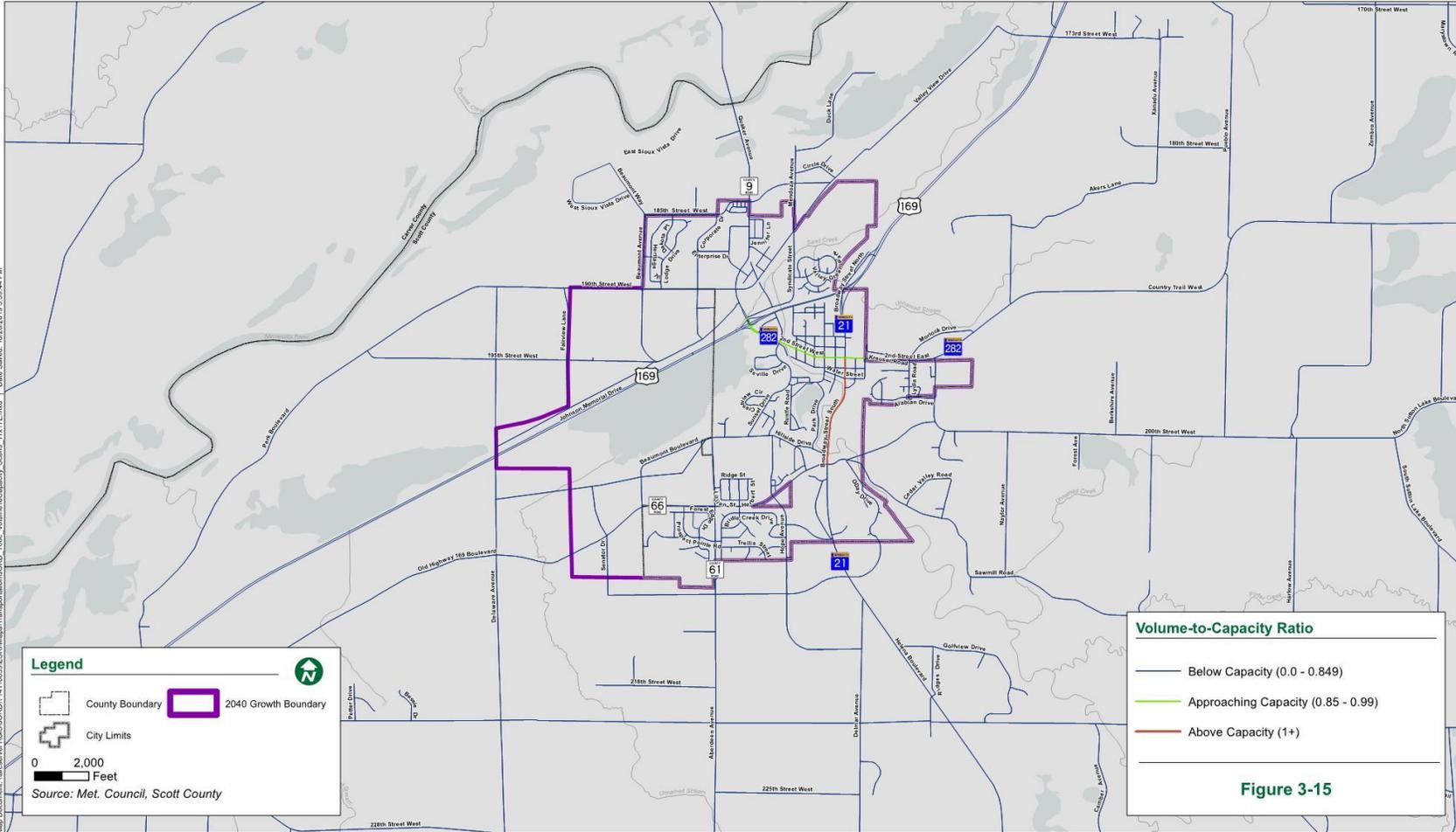


2040 Comprehensive Plan
Jordan, Minnesota

2040 Volume to Capacity (Scenario 2)
October 2019



MAP 3-15: 2040 VOLUME TO CAPACITY (SCENARIO 3)



The 2002 TH 169 Corridor Management Plan recommends transitioning TH 169 to a freeway facility from I-494 to Belle Plaine, including through the City of Jordan. The City supports this corridor vision and will continue to work with MnDOT to achieve the vision. A 4-lane freeway facility will be accomplished following the construction of the CSAH 69 / TH 41 / US 169 interchange in 2019-2020 and completion of grade separation in Jordan.

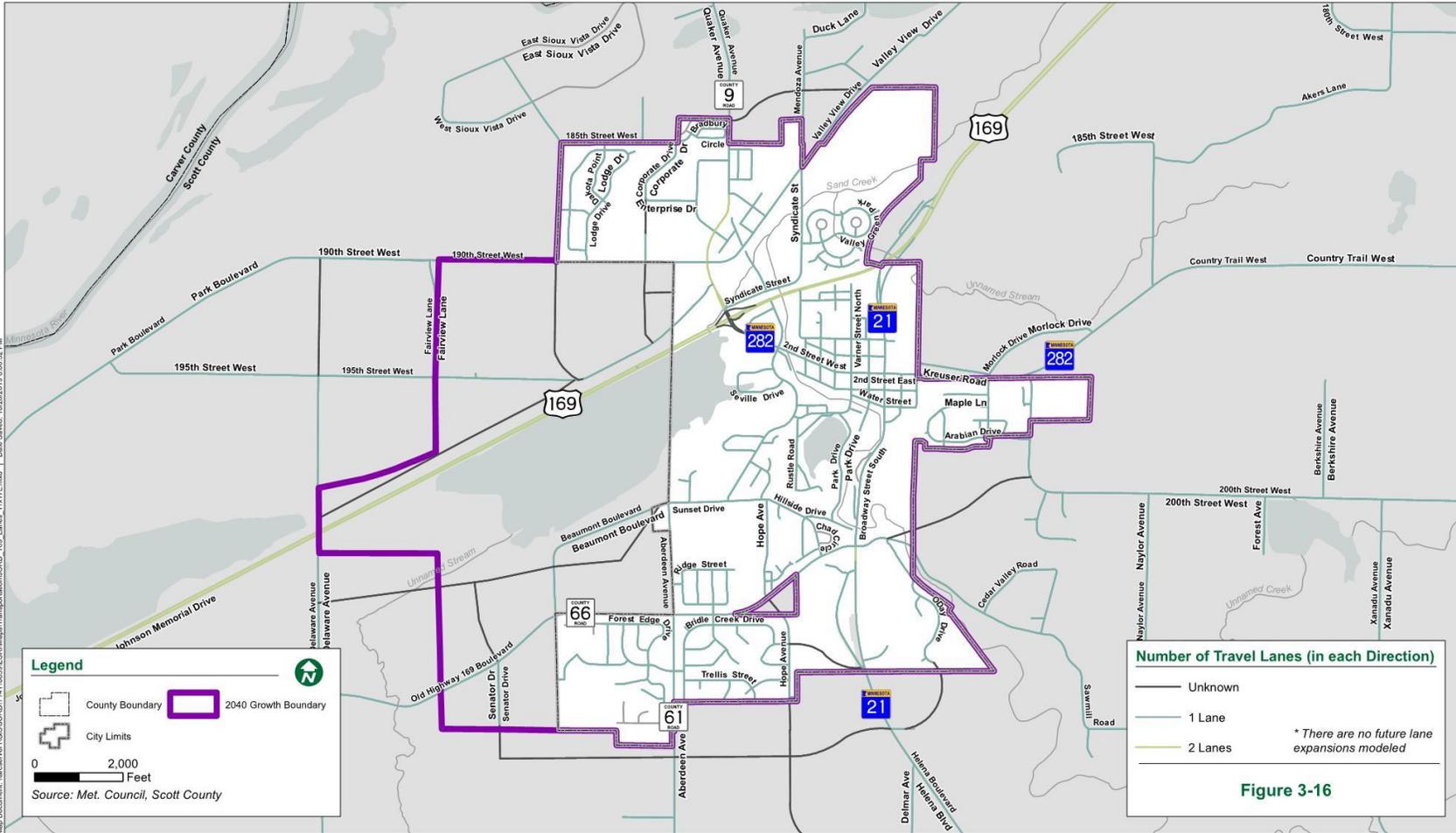
The City of Jordan and MnDOT will be required to address the increasing volumes on TH 21 and TH 282 as traffic passes through the heart of the downtown area. These roadways are over capacity in some segments in the existing condition and this will worsen over time. Growing traffic volumes on TH 21 will present difficulties for pedestrians and motorists crossing TH 21.

Forecasted volumes in the downtown area are in a range that may be able to be supported by an urban 3-lane or a 2-lane divided roadway. Expanding TH 21 and TH 282 to 4-lane facilities may not be acceptable to the City, due to the loss of on-street parking, and a 4-lane facility may not be as functional or safe as other alternatives. While it may be more challenging to develop an acceptable solution to capacity problems in the downtown area, TH 21 and TH 282 will also need capacity improvements out of the downtown area.

No congestion was identified on Jordan's local city streets or Scott County roadways near Jordan under 2040 conditions based on Scott County's analysis and Met Council TAZ information.

It is recommended that street expansion be considered at the time of pavement reconstruction (per the City's pavement management plan) on local roadways identified as collectors or higher classification. Expansion of local roadways solely triggered by capacity demands is not anticipated, with exception to intersection improvements of local roadways at trunk highways in Jordan.

MAP 3-16: NUMBER OF TRAVEL LANES



TRANSIT

It is recognized that various methods of travel impact the economic vitality of a city, county, or broader region. The term transit applies to all forms of sharing rides, regardless of whether the service is provided by a public or private operator, organization, or individual vehicle owner, or whether the ridesharing arrangements are formal or informal. Most transit rides in the metro area are provided by public transit systems which operate of a fixed schedule to transport groups of people to designated stops. Public transit relieves burden on the transportation network by reducing the number of vehicles that would otherwise be necessary to transport the individual users.

Transit studies can evaluate current transit service performance and analyze the market to identify any unmet needs and to look for opportunities to enhance transit service. Generally, communities with dial-a-ride as an initial service explore the feasibility of providing a fixed route schedule to connect residents with businesses, schools, places to shop, and employment centers.

I. CURRENT CONDITIONS

The City of Jordan is currently outside of the transit capital levy district. Scott County Transit currently provides dial-a-ride service throughout the county. SmartLink is the mobility manager for Scott County and consists of four transit services:

- Transit Link which is a contracted dial-a-ride service through the Metropolitan Council and is a shared-ride, reservation-only transit service. Fares are established by the region.
- A supplemental volunteer driver program for trips that are denied on the Transit Link system. Volunteers drive their own vehicles and donate their time to provide transportation for residents that could not be scheduled on the bus systems.
- A shared vehicle program which coordinates the use of a vehicle that allows multiple partners to use a small bus for a wide range of services and transportation options.
- SmartLink coordinates non-emergency medical transportation to provide a means of getting patients to non-emergency medical service appointments.

The City currently does not have a regular-scheduled public transit alternative. The closest regular route transit services are at the Marschall Road Transit Station in Shakopee located near TH 169 and CSAH 17. Routes 490, 493, 495, 497, and 499 service this station. These routes offer express service to downtown Minneapolis, Burnsville, and the Mall of America. The Blue Express is an express commuter bus service providing connectivity between Shakopee and Minneapolis from 8 AM to 8 PM provided by MVTA. This service is a collaborative operation between Shakopee Transit and Prior Lake Laker Lines.

A park and ride facility also exists at Lion's Park. There are approximately 15 parking spaces with a 25-33% occupancy rate.

The City is also served by 'Land to Air.' A subsidiary of Jefferson Lines, it operates an inter-city bus service from Mankato to downtown Minneapolis. The inter-city transit service is subsidized by a MnDOT 5311(f) grant, which is a funding source dedicated for inter-city transit options. Known as the "169 Connection" the inter-city bus service includes two round trips daily from Mankato to

downtown Minneapolis with stops at MNSU-Mankato, Gustavus Adolphus College, St. Peter, Le Sueur, Belle Plaine, Jordan, and Shakopee. This service connects to Minnesota Valley Transit Authority Route 495 at the Marschall Road Transit Station, which connects to transit options at the Burnsville Transit Station and Mall of America. The connection in downtown Minneapolis is the Hawthorne Transportation Center where there are statewide and national inter-city transit options.

II. FUTURE TRANSIT PLAN

The Metropolitan Council has defined Transit Market Areas based on the following primary factors:

- Density of population and jobs
- Interconnectedness of the local street system
- Number of autos owned by residents

In general, areas with high density of population and jobs, highly interconnected local streets, and relatively low auto ownership rates will have the greatest demand for transit services and facilities. Transit Market Areas are a tool used to guide transit planning decisions. They help ensure that the types and levels of transit service provided, in particular fixed-route bus service, match the anticipated demand for a given community or area.

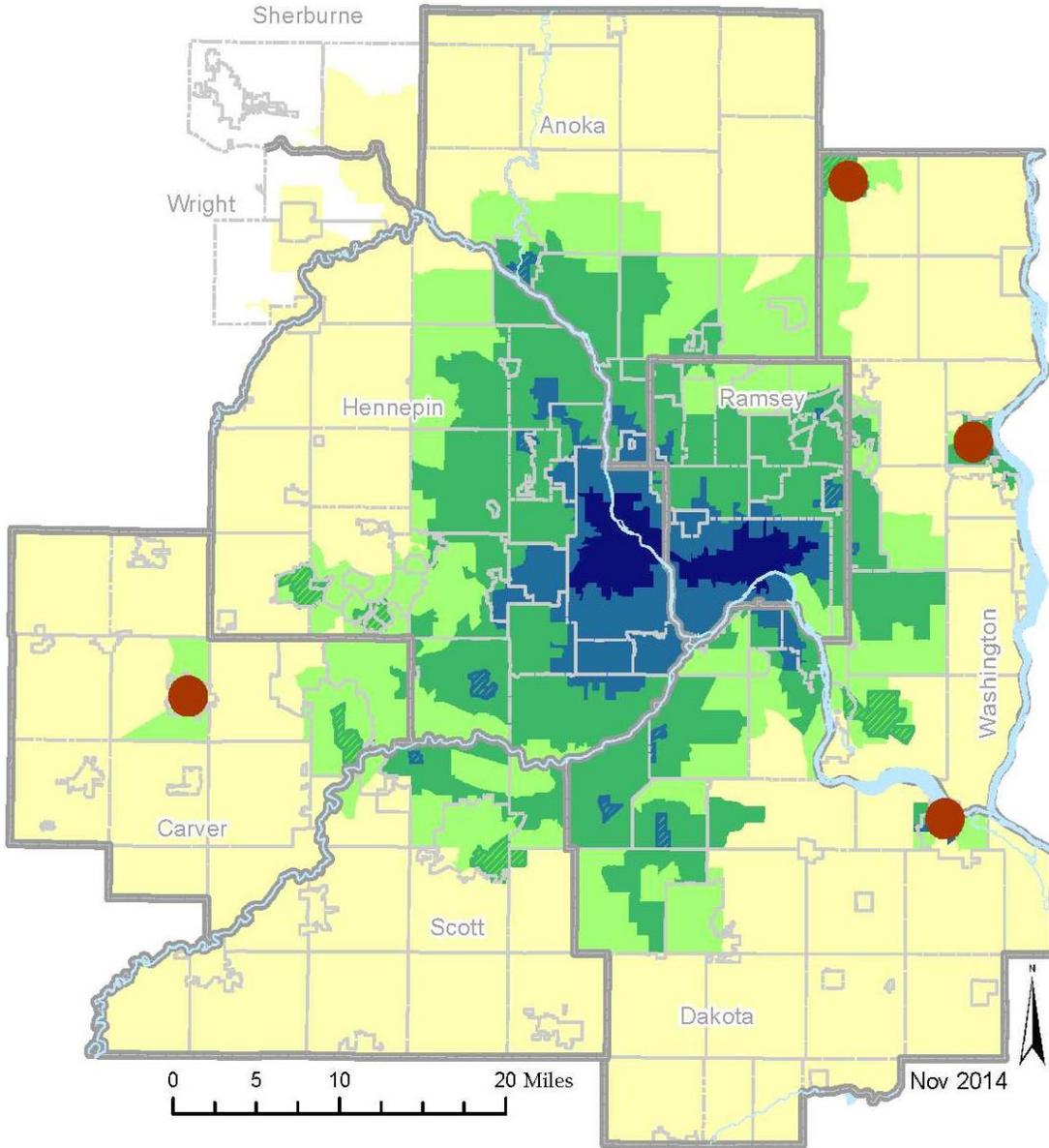
Based on this analysis, the Metropolitan Council categorizes the City of Jordan as Transit Market Area V. As identified in Appendix G of the Metropolitan Council's 2040 Transportation Policy Plan (TPP), the characteristics of this category area are as follows:

Per Met Council; Transit Market Area V has very low population and employment densities and tends to be primarily rural communities and agricultural uses. General public dial-a-ride service may be appropriate here, but due to the very low-intensity land uses these areas are not well-suited for fixed-route transit service.

Growing traffic volumes and levels of congestion will continue to decrease mobility through and near the city, especially on US 169. With identification of Jordan as a Market Area V, it is not anticipated transit service will be provided in the next 10 years beyond dial-a-ride service. To assist in managing travel demand on the corridor, the City should consider maintaining existing the park-and-ride location with more capacity close to US 169 and monitor needs for expanded opportunities with MVTA and/or Scott County Transit. The City should continue to work with Scott County Transit to determine long term needs for additional service and opportunities to integrate with services provided in other cities.

MAP 3-17: TRANSIT MARKET AREAS

Transit Market Areas



- Market Area I
- Market Area II
- Emerging Market Area II
- Market Area III
- Emerging Market Area III
- Market Area IV
- Market Area V
- Freestanding Town Center

BICYCLING AND WALKING

Bicycle and pedestrian circulation is an important component of the transportation system that needs to continue to be developed. The City of Jordan currently has 20.65 miles of concrete sidewalks and 3.95 miles of bituminous trails. **Maps 3-4 and 3-5** illustrate existing trail and walk locations. As the City and employment opportunities within the City grow, the system will develop alternatives for residents to travel about without utilizing an automobile. It is the desire of the City to develop alternative modes of transportation to reduce traffic demand.

Trail and sidewalk needs are discussed in detail in Chapter 5 Parks and Trails Plan. Please refer to Chapter 5 for further discussion.

AVIATION

There is no public airport within the Study Area. A rarely used private airstrip named Stocker Landing Field is located just north of the current City limits east of CSAH 9. The City is outside of the "Airport Influence Area," with Flying Cloud Airport in Eden Prairie being the closest Metropolitan Airport identified in the Metropolitan Council's Transportation Policy Plan.

As noted in the discussion of the existing transportation system, the City of Jordan is required to include standards for airspace protection in its Comprehensive Plan and local controls. Federal Regulation Title 14, Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for evaluating the effect of the construction or alteration on operating procedures, determining the potential hazardous effect of the proposed construction on air navigation, identifying mitigation measures to enhance safe air navigation, and charting of new objects. Notification allows the Federal Aviation Administration (FAA) to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace.

Title 14, Part 77.13 requires any person/organization who intends to sponsor any of the following construction or alterations to notify the Administrator of the FAA when:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 feet
 - Within 10,000 feet of a public use or military airport which exceeds 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet
 - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;
- Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards;
- When requested by FAA; and,
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Persons/organizations intending to sponsor construction/alterations which require notification to the FAA under Title 14, Part 77.13 shall notify the FAA using FAA form 7460-1 as may be amended.

The City's Zoning Ordinance should be amended to require persons/organizations intending to sponsor construction/alterations which require notification to the FAA under Title 14, Part 77.13 to notify the FAA using FAA form 7460-1 as may be amended.

The City of Jordan's Zoning Ordinance was updated in April of 2009 to include aviation requirements. The new language requires an applicant, who proposes the construction of any

structure with a height equal to or greater than 200 feet above ground level; or the alteration of any structure to a height which is equal to or greater than 200 feet above ground level, to notify the MnDOT Aeronautics and Federal Aviation Administration of the proposal at least 30 days prior to the City's Council's consideration of the request.

FREIGHT

Arterial Roadways

The City of Jordan functions as a hub for three trunk highways, a Union Pacific railway, and Union Pacific spur line. Therefore, a significant amount of freight traffic flows through Jordan on a regular basis.

US 169 is a corridor of statewide significance for freight traffic, serving as the primary corridor for movement of goods between south central Minnesota, southwest Minnesota, northern Iowa and the Minneapolis / St. Paul metropolitan area. 11% of traffic on US 169 is freight traffic, which equates to 2300 heavy commercial vehicles per day traversing Jordan. Therefore, mobility efficiencies gained on US 169 have statewide benefit to the transport of goods for end users. The signal at US 169 / TH 282 is currently causing 561 hours of delay to trucks each month, which is a significant burden on freight travel through the community.

TH 21 carries 740 trucks through Jordan each day while TH 282 transports 540 trucks daily. The signalized intersection of TH 282 / TH 21 as well as the congestion along both roadways introduce delay for freight. MnDOT is planning improvements to two bridges along TH 21 in 2020; one bridge over Sand Creek and another over the Union Pacific Rail spur.

Railroads

Union Pacific operates two railroad corridors in the Jordan area. The railroad adjacent to Sand Creek runs 2 trains per day. The railroad paralleling TH 169 on the northwest side operates approximately 7 trains per day.

Freight Generation

As of June 2019, the City is home to several businesses that generate oversized freight traffic, including:

1. SM Hentges & Sons – Heavy highway construction contractor
2. Minger Construction – Heavy highway construction contractor
3. Jordan Transformer – Specialized large transformer repair
4. Siwek Lumber – Lumber yard and contractor supply

Local Roadway Barriers to Freight Travel

The Varner Street Bridge is a functionally obsolete structure which was evaluated for improvements in 2010 and again in 2017. Due to lack of funding however, improvements to the bridge were not made. The bridge had a posted load restriction between 2010 and 2017.

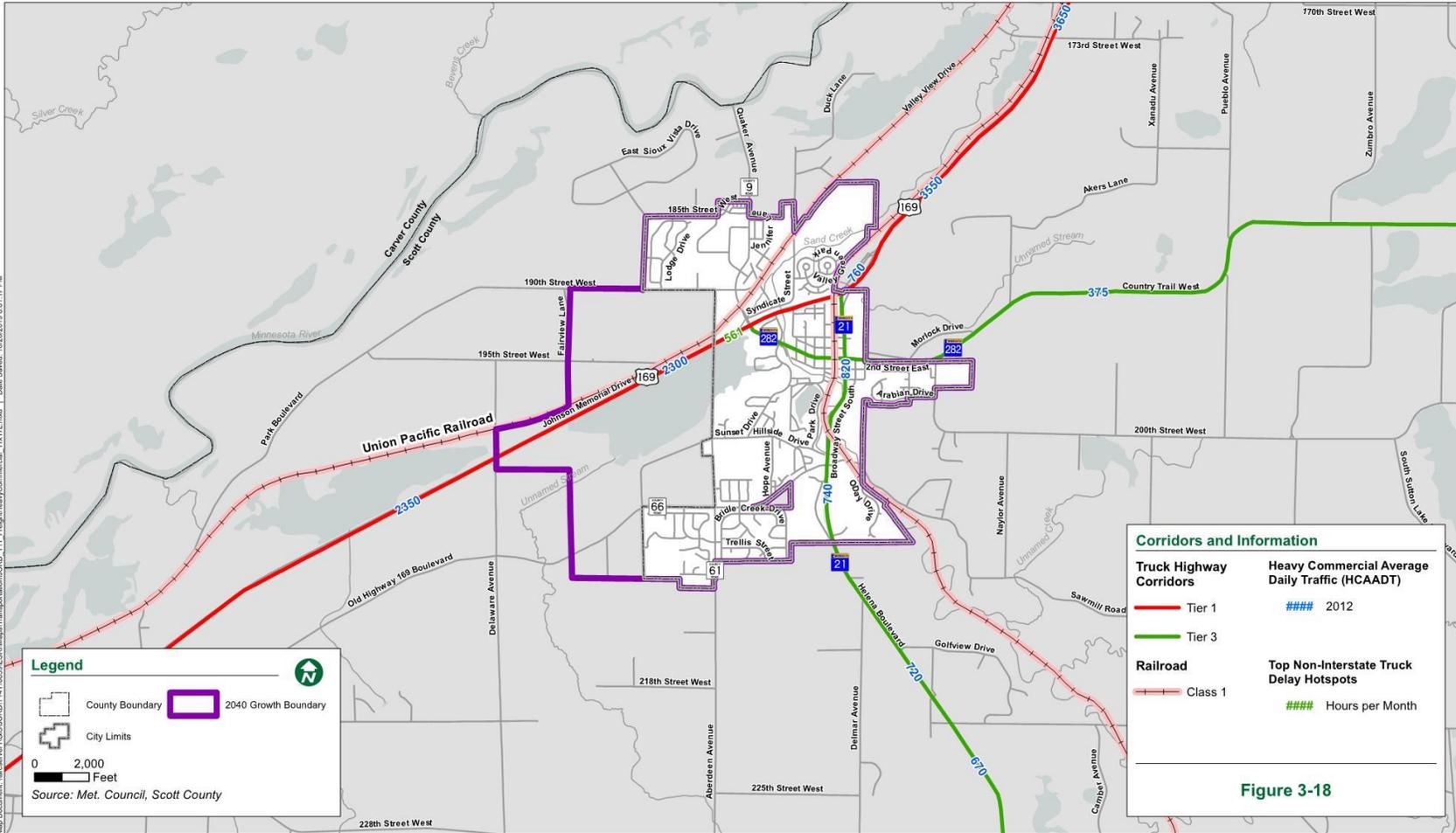
The signalized intersection of US 169 / Hwy 282 / CR 9 provide a barrier to safe and efficient freight travel. In late 2020 the signal will become the only remaining signal on the US 169 corridor between St. Peter and the northern metro area. Given the heavy volumes of freight, it is a goal of the City, MnDOT, and Scott County to grade separate the intersection as soon as suitable funding is available.

MAP 3-18: FREIGHT, RAIL AND HEAVY COMMERCIAL CORRIDORS



2040 Comprehensive Plan
Jordan, Minnesota

Freight, Rail, and Heavy Commercial Corridors
October 2019



GOALS AND IMPLEMENTATION

The following goals and strategies outline the City of Jordan's plan for ensuring adequate infrastructure is available to support the growth anticipated within the urban growth boundary, as well as potential funding sources for completing necessary improvements.

I. GOALS

The transportation goals and implementation strategies identified have been developed to meet the needs of the land uses associated planned 2040 growth.

1. Comprehensive Transportation Planning – Approach transportation in a comprehensive manner by giving attention to all modes and related facilities through linking transit and land use and by combining or concentrating various land use activities to reduce the need for transportation facilities.
2. Transportation System – Create/provide a safe, cost effective, and efficient transportation system that is adequate for vehicular, pedestrian, bicycle, and truck transportation for the movement of people and goods and services in the community.
3. Transportation and Economic Development – Create or encourage a transportation system that contributes to the economic vitality of the community by connecting people to work, shopping, and other activity generators/attractions and supports growth of commercial and industrial uses.
4. Regional Transportation Planning – Cooperate on a regional level in planning and development of a transportation system, including coordination among multiple jurisdictions, public and private transit providers and agencies at all government levels, while serving the functional needs of all.
5. Regional Traffic Management – Work on a local, state, and regional level to reduce traffic congestion and safety concerns on transportation corridors.
6. TH 169 – Improve connections to TH 169 by working with MnDOT, Scott County, and other agencies to plan for and complete grade separation at TH 282/CSAH 9 and CSAH 59/Delaware Avenue in the future. Also work together to evaluate possible alternatives to improve transportation issues on TH 169 for the benefit of area residents and businesses, including participation in a future study to assess supportive transportation facilities (frontage/backage roads), future commercial/industrial uses, and uniform design guidelines.
7. Regional (South Metro) Transit – Recognizing the warrants may occur in the future, encourage the continued operation and future expansion of the regional bus systems as a method of transportation between regional rural communities and to connect with the metro core.

8. Collector Streets – The location of collector streets promotes orderly development. As development plans are presented to the City, future collector streets should be designed to provide continuity and prudent access to other collector streets and arterials and adhere to the recommended access management guidelines and locations identified in this plan
9. Local Streets – Local streets should be laid out to permit efficient plat layout while being compatible with the area's topography, adjacent roadways, municipal utility plans and environmental constraints.
10. Maintain Existing Infrastructure – Preserve and maintain the existing transportation infrastructure to protect the significant investment, to increase its efficiency, and delay the need for improvement or expansion by use of a Capital Improvement Plan.
11. Transportation Improvement and Expansion – Improve and expand the existing transportation system as necessary to meet current and future transportation needs.
12. Municipal Services – As the street system continues to expand, street maintenance such as snowplowing, grading rural roadways, crack sealing and seal coating, routine maintenance, etc. will become increasingly important issues. Additional street construction will either increase contracted labor expenses or necessitate an expansion of the City's services provided by the municipal public works department. Prior to approving proposed subdivisions, consideration should be given to the City's ability to provide municipal services, facilities and equipment for snowplowing, street grading, minor street repair, etc. on either a contracted or staff basis.
13. Transit/Alternative Modes of Transportation – To diminish/prevent congestion, the City should encourage alternate and/or integrated transportation methods that are less dependent on motor vehicles. The City could promote and encourage walking and biking as alternate transportation methods. The City should strive to provide park and ride facilities near TH 169 as a means of encouraging car-pooling and ride sharing. As the population ages and diversifies, bus service will become an important amenity in the community and should be further studied with transit authorities. Special attention should be given to improving pedestrian access, movement and crossings to provide both convenience and safety. The City should work with the Metropolitan Council, or an opt-out provider, to determine future transit services consistent with the City's transit market area and its associated service standards and strategies.
14. Regional Transportation Funding – Pursue a balanced approach to financing transportation and other community needs at the local level based on current availability of services and facilities and maintenance of existing infrastructure.
15. TH 21 & TH 282 Future Studies – Partner with MnDOT and Scott County to study alternatives to TH 21 and TH 282 to address anticipated capacity issues and pedestrian safety.

16. Arterial Roadway Crossings – The City should promote safe pedestrian crossings of arterial roadways.
17. Roadway Project Coordination – Continue to coordinate future road construction and reconstruction projects with all utility service providers within Scott County to ensure efficient repair/replacement and avoid duplicate costs.
18. Capital Improvement Planning – Develop a Capital Improvement Plan that contains elements for new construction and reconstruction of the roadway system, with scheduled maintenance included in annual budgets per the City's Pavement Management Plan. Street maintenance should also be included consistent with the City's Pavement Maintenance Plan which should include routine patching, crack filling, and/or seal coating.
19. Zoning and Subdivision Ordinance Update – Update the Zoning and Subdivision Ordinances consistent with the Transportation Plan.
20. Right-of-Way Dedication – Require right-of-way dedication along state, county, and local roads to meet future capacity needs.
21. Development Driven Improvements – Work with developers to construct needed improvements prior to development.
22. Non-Development Driven Improvements – Non-development driven improvements should be prioritized and programmed in the Capital Improvement Program.
23. Minor Collector Review – review concept plans for plat and development proposals to evaluate the distribution of Minor Collector roadways so as to not overburden local streets.
24. Assessment Policy – Develop an assessment policy for Major Collector and Minor Arterial roadways to establish expectations and ensure consistent application.
25. Developer Agreements – Utilize developer agreements as a tool to ensure improvements are constructed as agreed upon in the platting or development process.
26. Traffic Impact Study Policy – Establish a policy outlining when a traffic impact study should be conducted, including acceptable information to be contained within the study.
27. Gravel Roadway Improvements – When traffic from a proposed urban development may exceed 500 ADT, work with the developer and township to identify a strategy to upgrade and improve the gravel corridor through a joint agreement with the developer, township, and City.

28. Trail System along County Roadways – Support the County's trail system policies of developing a system to serve countywide healthy/active living needs (i.e., access to County parks, activity centers, and schools), and transportation needs that provide connections between municipalities and to adjacent counties by:
- Including trails as part of the Transportation Improvement Program
 - Coordinating development of trails with counties, cities, townships, and Three Rivers Park District when opportunities arise
 - Including paved shoulders or separated trails as a regular component of highway improvements on both sides of the highway where possible in the urban area
 - Including separated trail facility phasing considerations (additional right-of-way, grading) on County identified future separated trail corridors where current needs do not warrant a full facility with a project on the trail corridor
 - Supporting the provision of pedestrian and bicycle facilities that are consistent with the safe and convenient circulation/recreational needs of pedestrians and bicyclists
 - If rail corridors become available through abandonment, pursue options of alternate uses including trails and other forms of transit or recreation uses
 - Coordinate with Scott County on facility types and cost-sharing when the County makes roadway improvements on County Highways. It is the County's policy to construct a trail or sidewalk facility on both sides in the urban areas.

II. STRATEGIES

Various strategies can be utilized to ensure proper transportation improvements are made to provide and protect the infrastructure investment. Astute land use planning and subdivision plat review are key to ensuring the long-term roadway network vision is developed and future traffic issues are avoided. To accomplish this, each development proposal (e.g. redevelopment of a single parcel, plat review, change of use, expansion of a business or operation, etc.) should be evaluated for consistency with the following policies/standards.

1. Work with property owners and developers to remove and/or relocate existing driveways and field approaches off non-local roads.
2. Provide road and trail connectivity between adjacent parcels.
3. Review/require access spacing that is consistent with the Transportation Plan.

4. Connect residential and non-residential areas.
5. Review developments for the accommodation of transit opportunities as part of the development review process.
6. Require turn and bypass lanes on non-local roads impacted by new development, including those that are not immediately adjacent.
7. Require offsite improvements, including those in other jurisdictions, where the existing transportation network will be directly impacted by new development, including where the development is not immediately adjacent. This could include but is not limited to paving roads, repairing surfaces, fixing sub-standard drainage, improving sight distances, etc.
8. Require the dedication of rights-of-way for all required future transportation improvements identified in the transportation plan including trails, roads, bridges, transit facilities, drainage, utilities, and any other related improvement requiring use of a corridor/location.
9. Require the equitable participation in the construction of collector and arterial roads.
10. Review probable neighborhood traffic patterns, areas where excessive speed is possible, and the potential for pedestrian conflicts.
11. Require all local roads to be constructed to property lines, or the corresponding amounts of money be escrowed, where stub streets are proposed to adjacent properties, but are not immediately warranted.
12. Require fees, construction participation, and/or cost participation proportionately to future required infrastructure such as overpasses, interchanges, and other local/county responsibilities as afforded by law and justifiable.
13. Require traffic impact studies, including the analysis of intersections to determine the need for and contribution to intersection improvements.

III. IMPROVEMENTS

In addition to the review of specific development driven improvements, short-term and mid to long-term improvements have been identified for capital improvement planning purposes as follows.

Short-Term Improvements (2018 - 2023 years)

It is recommended that the City of Jordan, together with MnDOT and Scott County, work to build consensus around grade separation at the US 169/TH 282 intersection. Once consensus is achieved on a preferred concept (or two), it is recommended these agencies jointly complete environmental documentation for compliance with NEPA. A funding plan should be prepared to

identify potential funding sources for grade separation. Potential major funding sources include the Met Council Regional Solicitation, MnDOT Corridors of Commerce, MnDOT Highway Freight Program, TIGER Federal Funding, the State Local Road Improvement Program, and the State Bonding Bill.

As traffic volumes increase to levels forecasted, it is recommended that the City of Jordan initiate capacity and intersection control needs studies for the intersections of Hillside Drive/Sunset Drive and CR 66/TH 21/Sawmill Road. Several intersections along TH 282 have apparent needs as well, though these are assumed to be largely addressed previously or will be with interchange considerations. Traffic intersection control studies would determine safety, capacity, and traffic control needs. A planning level cost estimate in 2016 dollars for a phase one study is estimated at \$10,000 to \$25,000 per intersection, with higher costs generally being incurred at trunk highways and county roadways due to increased submittal requirements.

Improvements to the intersection of Creek Lane / TH 282 are recommended as soon as funding allows. The City has received \$1 million in funding through the Local Road Improvements Program, and is awaiting potential additional funding of the project via the State Local Partnership Program (LPP). If successful, the project would be implemented in 2021. Any necessary local funding should be sourced from the City's State Aid Construction Fund.

The Varner Street Bridge over Sand Creek has been identified for need of bridge deck resurfacing, however its deficient geometrics do not allow such work to be funded with State funds. The City considered replacement of the bridge deck for 2018 with State funds, but chose to wait on these improvements until a later date.

MnDOT is planning reclamation and resurfacing of TH 282 from Mill Street to TH 13 in 2021. In conjunction with the scoping of the project, MnDOT inquired in 2017 whether the City would like to participate in the addition of a trail along the south side of TH 282 from TH 21 to Lydia Road. MnDOT did not provide a cost estimate for the work but did note they were seeking State funding for a portion of the work. Coincidentally, this potential trail segment aligns with an identified trail gap in the City's system. MnDOT provided a preliminary layout of the trail improvements and requested comments from the City. The City considered the initial layout in 2017 but did not desire to pursue the trail improvements. If the City changes course on this decision to complete this trail gap, it is recommended it notify MnDOT, address any geometric layout concerns with MnDOT, and secure external funding to pay for the trail. It is also recommended.

The City has an active pavement management program first initiated in 2012. The City's policy is to evaluate roadway segment conditions (citywide) once every three years. From this evaluation, pavement condition ratings are quantified, and the proper timing of major maintenance projects and reconstructions are estimated. These results are then recommended for inclusion in the City's Capital Improvement Program. It is recommended the City continue to evaluate its roadway conditions once every three years (next year due is 2021). The City may wish to consider a variety of methods available for evaluation of roadway evaluation and quantification of condition.

With MnDOT's completion of the US 169 Access Management Study and construction of new grade separation at CR 14 / US 169 and TH 41 / US 169, the need is apparent for a well-developed

network of frontage and backage roads along US 169 for safety and mobility improvements. Such improvements will align nicely with current funding programs promoting both freight and safety improvements, and therefore it is recommended the affected agencies implement such improvements while such funding is politically supported. A frontage road has been conceptualized from CR 9 to Delaware Avenue. A combination of existing roadways coupled with new connections may suffice to connect CR 9 to Bluff Drive. Scott County has developed proposed frontage and backage road connections north of Bluff Drive. It is recommended Scott County, MnDOT, the City of Jordan, and affected townships cohesively plan these connections, further study the details and costs of such connections, and jointly pursue external funding in conjunction with US 169 access management measures over the next five years.

Mid to Long-Term Improvements (2023 – 2040)

It is recommended that the City of Jordan and Scott County work together to initiate a corridor preservation study to determine an alignment option for further planning, preservation, and environmental analysis for the extension of CSAH 10 to TH 21 at Sawmill Road. Historically (2008) it had been agreed that Scott County will fund half and the City will fund half. For budgetary purposes, \$75,000 in total cost can be estimated for this study though actual cost should be defined based on final scope of the study.

As traffic volumes approach 12,000 vehicles a day on TH 282 and TH 21, it is recommended that the City of Jordan and MnDOT study roadway capacity improvement options for the corridors. A planning level cost estimate is estimated at \$75,000 per corridor, depending on the limits and magnitude of the studies. Funding for the study is anticipated to be provided by the City and State.

As development approaches gravel roadways adjacent to the urban growth boundary, the City of Jordan should work with the adjacent townships to measure traffic volumes and develop a strategy for upgrading gravel roadways when necessary. A planning level cost estimate in 2018 dollars for collecting and reviewing the traffic counts on each corridor is estimated at \$750 annually.

Development of collector roadways should occur in conjunction with development of areas outside the existing city limits.

IV. POTENTIAL TRANSPORTATION FUNDING SOURCES

There are a number of various funding mechanisms available to support transportation projects. These include the following sources:

Federal Funding

Jordan may apply for federal funds for highways through the Met Council Regional Solicitation. Solicitation occurs approximately every two years, with federal funding usually covering about 80% of a project's cost. Types of projects funded include highway reconstruction, safety projects, trails which are part of projects, transit and park-and-ride projects.

MSAS System

The State of Minnesota, through the gas tax and license fees, collects funds to be used to construct and maintain the State's transportation system. Most of the funds collected are distributed for use on the State's Trunk Highway (TH) system, the County State Aid Highway (CSAH) system and the Municipal State Aid Street (MSAS) system. Of the funds available they are distributed 62% TH, 29% CSAH and 9% MSAS. Cities with a population above 5,000 are eligible to receive a portion of the MSAS funding. Jordan has received state aid funding since 2006.

In 2014 the MnDOT State Aid Office and Municipal Screening Board developed a revised method for calculating funding distributions to cities. Jordan's state aid construction funding decreased by approximately 10% over the subsequent three years but has now increased above 2014 levels.

MnDOT Cooperative Funds

The State of Minnesota has funds available to assist with cooperative projects that increase safety and mobility. Solicitations are due in October each year for construction the following year.

MN Department of Natural Resources Grants

Various federal and state grants are available for the development or reconstruction of trails. Typically grants require a 50% match and illustration that the trail is not only of local importance but also of regional significance. Grant programs through the DNR for trail projects include the Federal Recreational Trail Grant Program, Regional Trail Grant Program, Outdoor Recreation Grant Program, and Local Trail Connections Program.

Other State Funds

Funding programs are seemingly in constant flux. It is recommended the City remain in tune with funding programs and their associated priorities, and structure projects in a manner to become competitive for the respective programs. In 2018 programs for other state funding include the Corridors of Commerce Program, Highway Freight Program, the Local Road Improvement Program (LRIP) and Bridge Bonding Program, and the Transportation and Economic Development (TED) program.

In recent years each of these programs have been assigned funding through the State's Bonding Bill. The Bonding Bill has often included specific project listings that must be funded by the programs as the respective program receives its funding. As the City pursues large scale transportation projects, it is recommended it work closely with SCALE and its lobbyist, as well as the local legislators, to attempt to have Jordan's specific needs identified in bonding bills in advance of program solicitations being issued. It is recommended the City continue this activity until the major transportation needs in the city are fully addressed or until the political climate has changed and individual projects are no longer listed in the Bonding Bill.

Scott County Sales Tax

The Transportation Sales Tax (½ percent sales tax and \$20 excise tax on vehicles purchased for road use) was established help fund road, bridge, and transit projects. The tax applies to the same items that are subject to the state Sales and Use Tax of 6.875 percent, thereby making the sales tax rate in Scott County 7.375 percent. However, the sales tax on motor vehicles purchased for road use will remain at 6.5 percent. Instead, a \$20 excise tax must be paid when purchasing a vehicle from a Scott County auto dealer. The Minnesota Department of Revenue administers the local sales tax and distributes the funding to Scott County. By Board resolution, the local sales tax will be collected for seven years, from October 1, 2015 to December 31, 2022, after which time it may be renewed by the County Board.

The County is raising approximately \$6 million annually which is used for projects identified in an Implementation Plan to improve safety, reduce commute times, and support economic development throughout the County. Scott County has typically used (and plans to continue to use) this funding on large scale projects also involving State and Federal funds, to fund local match requirements. The sales tax revenue is planned accelerate these projects while allowing the County to use its traditional sources of funding to maintain its current transportation system.

These funds have been dedicated to TH 13 improvements in Savage and TH 41/US 169 improvements in Louisville Township. The City of Jordan desires to use these funds for grade separation of Scott CR 9/ TH 282 / US 169 within the next 10 years.

Collector and Local Streets

Developers may be required to fund the entire cost of Minor and Major Collector roadways, as well as local streets as a part of their development fees. The City may wish to develop a policy and fee structure for construction of collector roadways. However, it is recommended the City first observe results of active legal disputes related to the construction of collector facilities in advance of development. If collection of development fees is prohibited by state law at some point, it is recommended the City consider requiring development to occur via the Chapter 429 process for special assessments (i.e. assess developers for collector costs) or other similar methods permitted by law.